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USS RANGER CV-61



COMPLEX OVERHAUL

15 FEBRUARY 1977 - 21 MARCH 1978

POST OVERHAUL REPORT



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1. As directed by reference (a), enclosure (1) is submitted.

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Distribution:
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Puget Sound Naval Shipyard
All Carriers PACFLT (6)
All COMCARGRU PACFLT (2)
PERA (CV) (4)



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GLOSSARY OF TERMS

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- ASF - Assist Ship's Force; Shipyard assistance furnished to the ship in the nature of services, labor, special tools or equipment.
- AWR - Automated Work Request; a computer generated OPNAV 4790/2K automated data processing form containing 3-M data from ship's CSMP file.
- AWR - Alteration Work Request; a description of a ship alteration.
- CIA - Controlled Industrial Area; where the ship will be berthed. Requires security pouch and parking sticker for access.
- COH - Complex Overhaul.
- CSMP - Current Ship's Maintenance Project; a file of all outstanding deferred maintenance actions representing the ship's total outstanding maintenance work load.
- EIC - Equipment Identification Code; a number code relating to various equipments used for retrieval of information from MECHANICSBURG, PA.
- JCN - Job Control Number; an eight digit number consisting of the work center code and the JSN (Job Sequence Number).
- JSN - Job Sequence Number; a four digit sequenced number assigned at the work center level.
- KEY EVENT - a standard four digit number that relates to a milestone of a ship's availability.
- KEY OP - Key Operation; a portion of a job constituting a logical work sequence bound by reasonable breaking points and separately identified within the job to permit effective management of the production effort.
- MANHOUR - one man working for an hour; can be industrial, operational, absences, etc. Eight manhours equal one man day.
- NAVAIR - Naval Air Systems Command.
- NAVELEX - Navy Electronics System Command.
- NAVSEA - Naval Sea Systems Command.
- NAVSHIPS - Naval Ship Systems Command.
- NAVSUP - Naval Supply Systems Command.
- PERA (CV) - Planning and Engineering for Repair and Alteration of aircraft carriers.
- PSNS - Puget Sound Naval Shipyard, Bremerton, Washington.

PERT - Project Evaluation Review Technique; Managerial tool for scheduling and tracking production effort.

Q.A. - Quality Assurance.

SARP - Ship Alteration and Repair Package; a listing of all SHIPALTs and repairs that will be done during COH.

SFOMS - Ship's Force Overhaul Management System.

SFWP - Ship's Force Work Package; a complete listing of all scheduled repair and overhaul work to be accomplished by the ship's force during the ship's availability period. This will be broken down into various reports:

Report 1 - An error listing to be used by the SFOMS Data Analyst.

Report 2 - Another error listing for use by the SFOMS Data Analyst.

Report 3 - A financial listing of equipment and parts purchased.

Report 5 - A listing of key operations that are scheduled for commencement and completion during the next three weeks.

Report 6 - A forecast of non-industrial hours available.

Report 7 - A summary of all non-industrial hours expended.

Report 8 - A statistical summary of all manhours expended.

Report 9 - Several reports which facilitate retrieval of data not covered in the other SFOMS reports.

Report 10 - A listing by JSN and key operation of all work to be done by each work center. It is further reduced by OWC and AWC:

AWC - Accomplishing Work Center; that work center which is performing the work.

OWC - Originating Work Center; that work center which requested the work be done.

Report 11 - A chronological listing of Report 10.

SHIPALT - Ship Alteration; a change in a ship's configuration encompassing change or improvement of an existing capability or addition of a new capability. It can be further subdivided into:

D Alteration - improvement of existing capability normally funded by TYCOM, or

K Alteration - addition of a new capability normally funded by NAVSEA but can be funded by TYCOM.

SHIP SUP - Ship Superintendent; an organization headed by the Assistant Repair Superintendent (ARS) that provides for waterfront coordination of the shipyard production effort.

SOAP - Supply Overhaul Assistance Program; a program to assist ships during an availability to adjust storage space, accomplish rebinning, inspect material to ensure its readiness for use and purify and replenish stock (OPNAVINST 4441.4 refers).

TYCOM - Type Commander; COMNAVAIRPAC for Pacific Fleet aircraft carriers.

TYPE DESK - PSNS representatives for NAVSEA and NAVAIRPAC. Concerned with formulation, funding and overall coordination of the Shipyard Work Package.

WBS - Work Breakdown Structure; a three digit number utilized by Shipyard Job Orders to identify major equipments.

ZULU CODE - a unique three digit number preceded by the letter "Z" which acts as a JSN for non-industrial manhour expenditures.

2 KILO - OPNAV Form 4790/2K; the standard input form for the 3-M System.

2K-2 - PSNS Manual Form 4790/2K-2; the standard form to input work into the SFWP.

COMMANDING OFFICER'S COMMENTS

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Thirteen months of complex overhaul have restored RANGER to a first class fighting ship of the line, materially ready to fulfill her role in the mission of the U. S. Navy. The successful overhaul of an aircraft carrier cannot be attributed to specific actions, relationships, individuals, organizations or related factors. As in other major undertakings of similar magnitude, the final outcome is the end product of a network of thousands of dedicated personnel focusing their energies on multiple objectives oriented toward a common goal. In the case of RANGER's overhaul, certain contributing factors did predominate, and an attempt has been made to address these items in this report. It is not the intent of RANGER's report to cover areas which have already been addressed by CONSTELLATION and KITTY HAWK in their post COH reports. Rather, this report highlights problem areas encountered by RANGER and should be used as a supplement to the reports of the other two carriers.

FOREWORD

FOREWORD

The transition required of an aircraft carrier in undergoing a complex overhaul is a traumatic experience. Although the change from an operational to an industrial environment is started many months prior to the actual commencement of the overhaul, operational considerations must take priority until resting on blocks in drydock. Key ship's force overhaul personnel should be identified as early as possible. It is advantageous and desirable to select personnel who will remain with the ship throughout the overhaul so as to provide a continuity of effort and expertise. Arrival at a viable ship's force work package requires timely identification of the work to be accomplished, extensive prior planning, and a realistic outlook at what can be accomplished. Many factors which can not be fully anticipated prior to the actual commencement of the overhaul (TAD, training requirements, scheduling conflicts, etc.), will necessitate periodic schedule reviews and prioritizing of the work package throughout the period of overhaul. As the overhaul approaches significant milestones (undocking, LOE's, etc.), it will become apparent that the ship's force senses an urgency that is not shared by the shipyard. Several factors contribute to this disparity. Each ship thinks of itself as a unique entity, however, to the shipyard, each overhaul is like the preceeding one and the one that will follow. Additionally, LOE's have usually been scheduled during the holiday season, and the average shipyard worker is not willing and cannot realistically be expected to work overtime, sacrificing his holidays year after year to ensure that such milestones are met.

The working relationships established among ship's force and key shipyard personnel can significantly effect the conduct of the overhaul. The orchestration of the myriad details characteristic to a major industrial endeavor can be keyed to the mutual support available to all participants. The staffing of RANGER's SFOMS Department with extremely competent, dedicated officers and petty officers greatly facilitated the engendering of such a spirit of common endeavor. The efforts of SFOMS Department personnel were invaluable and truly synergistic in effect as departmental members provided the impetus essential to almost every aspect of the overhaul. The cooperation of key shipyard personnel enabled the completion of many projects initially considered to be beyond the scope of the shipyard work package.

Implementation of an effective safety program requires new focal points when transitioning to an industrial environment. Significant changes are required in the everyday behavioral patterns and modus operandi of the ship's crew. Aside from the obvious hazards of the industrial environment (open dry docks, increased fire hazards, movement of heavy equipment, etc.) a certain amount of cultural shock, caused by the local environment, will ensue. A particularly troublesome aspect of the environmental change is the inclement weather and the Washington state road system comprised of numerous small winding highways, as opposed to the sunny weather and high-speed freeways of southern California. The Washington roads claim an average of one shipmate a month, especially during the early months of overhaul. Early and continual re-education appears to be the only solution to this problem.

Another area which requires constant attention throughout the yard period is the cleanliness and habitability of the ship. Cooperation of the shipyard in the cleanup effort remains a rather lofty goal and the "bottom line" is that the ship's force is responsible for the cleanliness of the ship. During a complex overhaul the ship is uninhabitable, but due to lack of quarters ashore, a large percentage of the crew must live aboard. Lack of ventilation, heat, hot water and high noise levels have an adverse affect on morale. These items require the constant attention of all officers, particularly division officers, so as to assist the crew in making the best of an untenable situation. [Enclosure (1) is an excerpt from a brief which was presented at a Quarterly RANGER Progress Review for several visiting VIP's during COH 77. It offers an insight into the habitability problems encountered by a ship during overhaul.]

As has been noted by other carriers undergoing overhaul, a viable and ongoing training effort is mandatory due to a large influx of new personnel. The loss of industrial manhours required for training increases toward the end of overhaul and must be recognized in the formulative stages of the ship's force work package. RANGER's weekly SITREP was found to be an effective vehicle for resolution of training problems, along with the associated transportation and school quota problems.

Some topics discussed in this report may be considered redundant, but have not been deleted for purposes of emphasis.

STATISTICAL SUMMARY

STATISTICAL SUMMARY

ORIGINAL TARGET - 1,350,000 industrial manhours and 18,499 key operations.

REVISED TARGET - 1,579,776 industrial manhours and 8,851 key operations.

ACTUAL ACCOMPLISHMENT - 1,607,495 industrial manhours and 8,701 key operations.

Six months prior to the commencement of the overhaul, RANGER established the original target, which required a 10 hour work day for the 52 weeks of complex overhaul. Planning included a three week period in which the tempo of industrial efforts gradually increased as materials and support equipment became available and personnel adjusted to their new environment (Figure 1). At the end of three weeks RANGER planned to accomplish an average of 32,000 industrial manhours per week for the subsequent 35 weeks. After week 38 RANGER anticipated a gradual decrease in industrial manhours expenditures as increased time was spent training personnel for standing watches in the machinery spaces, as these spaces were completed, and in preparation for getting underway.

The large number of key operations initially planned soon proved to be unmanageable, and the departments consequently reduced the number of key operations per job (Figure 2). RANGER learned that in order to maintain a viable, effective management tool, lists of key operations should be reviewed weekly. As new work is identified, low priority key operations should be replaced with those of higher priority.

By week 36 it became apparent to RANGER that the original goal of 1.35 million industrial manhours would be surpassed for two reasons: first, the overhaul was extended to 57 weeks; and secondly, industrial work was decreasing at a much slower rate than had originally been expected. Thus, the remaining ship's force work package was rescope and 1,684,718 industrial manhours and 8,977 key operations were identified. Of these, 40,512 industrial manhours and 126 key operations were low priority and, due to manhour constraints, were deferred until after completion of the overhaul. These low priority key operations were included in the CSMP and deleted from the SFOMS program. A revised target of 1.58 million industrial manhours was then established.

On departure from Puget Sound Naval Shipyard, RANGER had expended 1,607,495 industrial manhours, 3,266 of which were accomplished by various reserve units during their drill weekends. Additionally, 8,616, or 97% of identified key operations were completed. Another 85 key operations were completed in transit to San Diego, and this ultimately yielded a 98% completion of identified key operations.

The reason industrial manhours exceeded the target while key operations lagged behind is two fold. Primarily, operational personnel are not adequately trained to scope and accurately estimate industrial work, and secondly, there was insufficient latitude in the manhour estimates for job growth.

Overall, RANGER expended 6,846,014 manhours during the 57 week overhaul.
A breakdown of manhour expenditures is listed below:

- A. DIRECT INDUSTRIAL LABOR.....23%
- B. DIRECT SUPPORT OF THE SHIPYARD.....19%
(SOAP Team, Q.A., Discrepancy Repair, Firewatch, etc.)
- C. NON-INDUSTRIAL OPERATIONS.....27%
(Watch standing, SFOMS Staff, Housekeeping, Admin duties, etc.)
- D. TRAINING.....18%
- E. ABSENCES.....13%
(Leave, Hospital, U.A., TAD, etc.)

GENERAL COMMENTS

GENERAL COMMENTS

The planning for a complex overhaul commences years prior to the overhaul, especially in regards to major ship alterations (SHIPALTS). Ship's force becomes involved approximately 8 months in advance, usually in the middle of a deployment when operational commitments are still at the forefront. Determination of the shipyard work package, as delineated by the SARP, begins with a review of the CSMP. Because determination of the work package begins so far in advance of the actual commencement of the overhaul, inputs by the ship's work centers into the CSMP (OPNAV 4790/2K) need to be submitted as early as possible. Additions to the CSMP just prior to COH will require special action for inclusion into the shipyard work package and have little chance of approval if they are of the "nice to have" nature. Ship's force can request and receive revisions to the shipyard work package at the various trade-off conferences held with PERA (CV) and the shipyard. Revisions to the SARP (i.e. shipyard work package, of which several will be issued) should be closely scrutinized by each department to determine what additions or deletions have actually been made. The proverbial "they" sometimes defer or cancel work and the cognizant department is usually the last to know.

As the yard period progresses, it becomes increasingly important for the ship's force to keep abreast of the work the shipyard is completing. Assignment of personnel to track SHIPALTS and specific areas of shipyard work was found to be effective.

Small discrepancies can often be corrected at the job site, if identified in a timely manner. Major discrepancies, whether in installation or design, may require Type Commander or NAVSEA approval for correction. Any delay in identifying discrepancies will compound the efforts necessary to take corrective action.

Determination of a viable ship's force work package, at first glance, appears to be an insurmountable task. PERA (CV) provides training in the actual scoping and planning of work. This training, however, will probably prove to be minimally adequate since the majority of the ship's force have had no previous shipyard experience. Manpower availability, which will be considerably less than anticipated, will also impinge on the work package formulation. Departments can anticipate losing up to 50% of their work force due to TAD requirements for SFOMS, training, and other activities. Hence, it is easy to overestimate the actual work that can be accomplished by ship's force during the availability period. Also, prior to the overhaul, it is easy to develop an attitude of "we'll get it fixed in the shipyard". In RANGER's experience, more work was identified than could possibly be accomplished. A prioritized plan must be developed to ensure that the most important work is scheduled for completion. Front-loading of the work schedule is a viable concept, as long as sufficient spool-up time is allowed to give ship's force time to adjust to shipyard procedures and the industrial environment. Additionally, a decline in industrial manhours during the last several weeks of overhaul, due to increased training, testing and certification requirements, must also be taken into consideration.

The initial training provided by PERA (CV) is extremely beneficial, but is not totally adequate. A face to face meeting with one's counterpart on the ship presently in overhaul is the best method to learn an overhaul related job. As many personnel as possible should be sent TAD to work with their counterparts.

The shipyard provides training in specific areas such as tiling, lagging, painting, welding, etc. Utilization of these courses will pay dividends in the quality of ship's force work. In addition, the ship's Engineering Department will quickly be snowed under by their own work package and will be able to provide other departments only minimal support.

A division officer's problems concerning the welfare of his men is also compounded in the shipyard. Since parking permits are required for access into the industrial area of the shipyard, personnel who have transported household goods on the ship to Bremerton will have trouble with their off-load. Issuance of temporary parking permits will alleviate this problem. Indoctrination will be required concerning the necessity for the use of ear plugs, hard hats, safety shoes, goggles, and each person will require foul weather gear. Each man should have a full sea bag since delays in laundry service are inevitable. Personnel living onboard will be required to frequently move to other berthing compartments on short notice due to industrial work. Above all, a sense of humor must be maintained.

Actual accomplishment of industrial work will create it's own unique set of problems. TAD requirements can take up to 50% of a division's remaining work force with very little prior notice. Reorganization of the departments so as to reduce the number of work centers to a minimum will also reduce the paperwork and manhour accounting (Report 12) problems. Naval reserve units in the Bremerton area can be utilized, not only to augment ship's force in industrial work, but also for training, audit inspections, dependent dental care, etc. All compartment numbers, name plates, and D.C. markings should be preserved when renovating spaces. The final paint-out and tiling of spaces should be scheduled during the latter segment of COH to lessen the possibility of having to re-do work. Pilferage will be high during the shipyard period. Responsible tool control petty officers, secure tool storage areas, and strict accountability are a must. Laydown areas are at a premium and with the high tempo of activity, any unmarked and unattended items will quickly be appropriated. All material delivered to the ship must be properly marked and expeditiously picked up by the owning division. Shipyard work requires access to any compartment on a 24 hour a day, 7 days a week basis. SFOMS provided the point of contact for space access with the cognizant departmental duty officer responsible for actual opening of the spaces. Off ship storage can be obtained for operational publications and tools not needed during the overhaul. However, accountability and publication updating procedures must be enforced. Receipt of TECH Manuals for new equipment will present a problem. As soon as new equipment is identified, action must be initiated to procure the manuals. Utilization of incentive programs, whenever feasible, can be very successful, but good supervision and getting the khaki out remain the key to good productivity and quality control.

The documentation of ship's force work, as required by the SFOMS Organization, can potentially become an administrative nightmare. Several steps can be taken to alleviate this problem. PERA (CV) can be utilized to train the maximum number of available personnel in the proper use of the SFOMS reporting system. All jobs listed in the SFOMS reporting system are required to be inserted into the CSMP. It is essential that a small cadre of departmental personnel become thoroughly familiar with the SFOMS reporting system to ensure accurate, valid reporting.

SFOMS ORGANIZATION

SFOMS ORGANIZATION

Eight months prior to the commencement of the overhaul the initial cadre of the SFOMS Staff was identified (Figures 3 and 4). Upon arrival at Puget Sound Naval Shipyard, all the officers and the majority of the enlisted personnel were identified and functioning in their assigned billets. Initially, RANGER used the basic SFOMS Organization promulgated by PERA (CV) with minor variations (Figure 5) and through attrition and expediency arrived at the final organizational structure (Figure 6). This organizational format is under review by PERA (CV) and may be adopted for future ships undergoing a complex overhaul.

It is recommended that the Training / FILS Coordinator / 3-M Coordinator work for the Shipyard Coordinator vice the SFOMS Coordinator, as most of his duties and responsibilities are related to those of the Shipyard Coordinator.

Quality Assurance, as established in RANGER, was a separate department administratively supported by the SFOMS Department but reporting directly to the Executive Officer.

Firewatch Division, as promulgated by PERA (CV) was organized as a division responsible to the Shipyard Coordinator. RANGER, however, made Firewatch a separate function directed by a function head (LCDR) as well as a division officer (LT) and an assistant division officer (LTJG).

The SFOMS Administrative Office was the central point of contact for communication between shipyard personnel and ship's force. A SFOMS duty officer was available on a 24 hour basis to assist in coordinating the industrial effort and in resolving problems.

USS RANGER CV-61

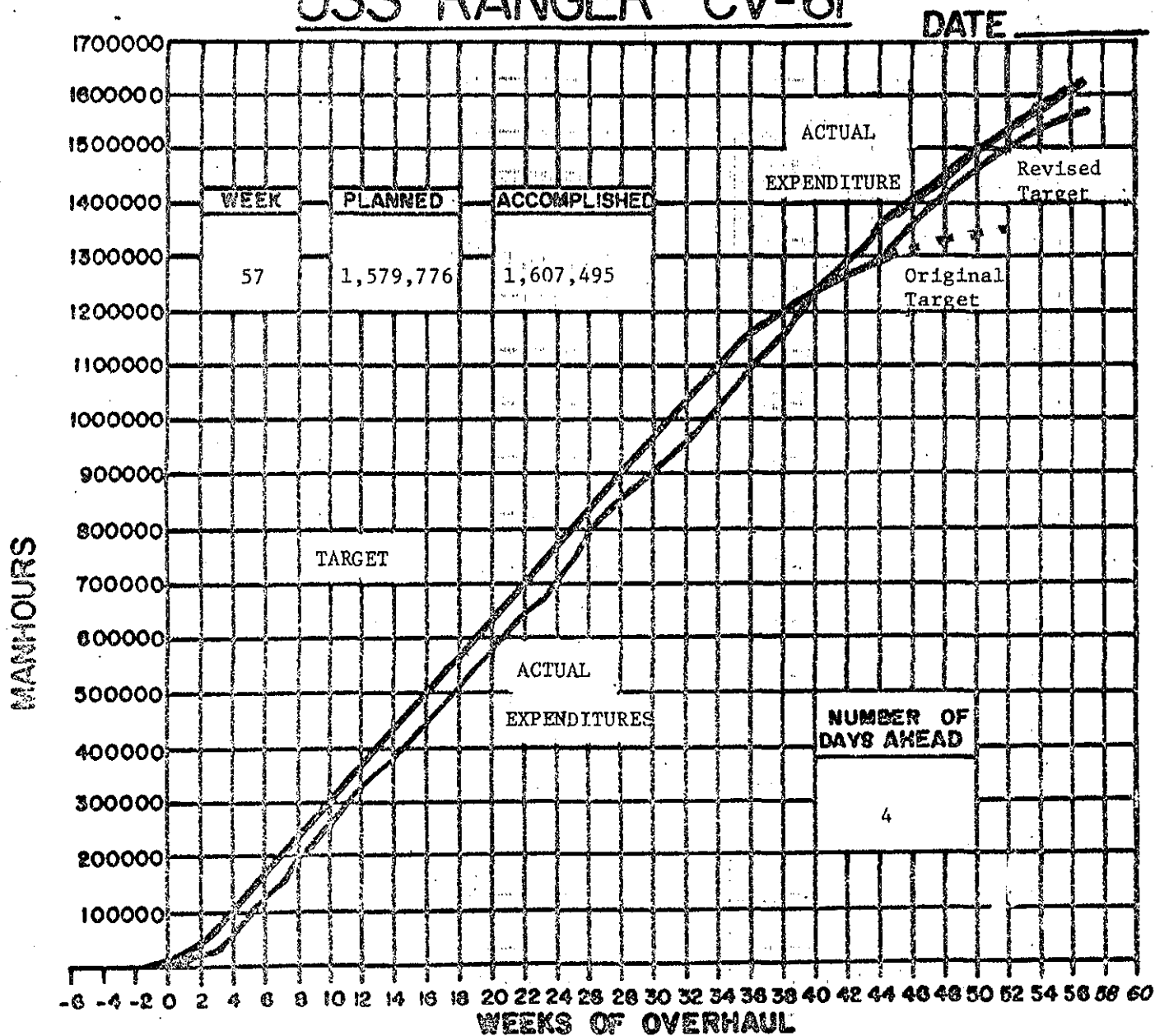


Figure (1)

USS TANGER CV-61

DATE

KEYOPS

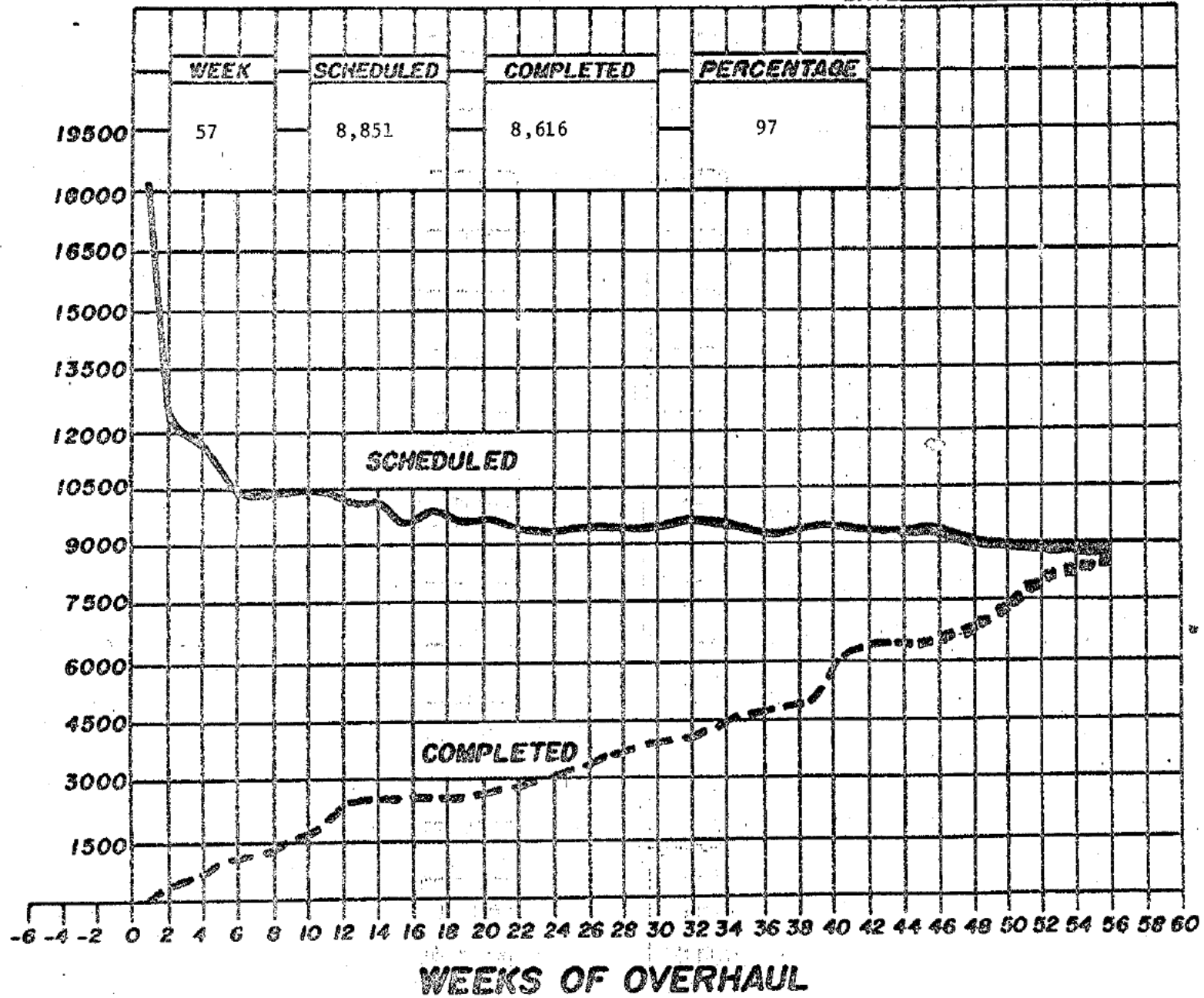


Figure 2

	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
<u>MANNING</u>														
OFFICER				3				19	23				22	
CPO				0				6	10				8	
ENLISTED				4				137	307				412	

NUCLEUS OF SFOMS STAFF IDENTIFIED

DEPART WESTPAC
PERA CV PHASE I (IDENTIFY WORK)

7 SEP RETURN CONUS

PERA CV (SCHEDULE WORK)
PHASE II
18 OCT SFOMS DEPT ACTIVATED

ROUGH ORGANIZATION MANUAL

21 DEC SFOMS FULL OFFICER COMPLIMENT

SFOMS ORGANIZATION MANUAL PRINTED

8 FEB SAIL
12 FEB COH START
25 FEB RANGER ON BLOCKS

PERA CV
PHASE III (GROOM PACKAGE)

1 APR KETTY HAWK DEPARTS

Figure (3)

MANNING
 OFFICER
 CPO
 ENLISTED

18
 8
 445

16
 7
 372

GRADUAL
 DISESTABLISHMENT
 OF
 PERSONNEL

AUG
 SEP
 OCT
 NOV
 DEC
 JAN
 FEB
 MAR
 APR
 MAY
 SO
 CAL OPS

20 AUG - Undocking

1 NOV - LOE #1 MMR

30 NOV - LOE #4 MMR

10 JAN - LOE #2 MMR

2 FEB - LOE #3 MMR

23 FEB - FAST CRUISE

24 FEB - DOCK TRIALS

3 MAR - SEA TRIALS .

21 MAR - COH COMPLETE

24 MAR - SFOMS DISBANDS

Figure (4)

SFOMS ORGANIZATION

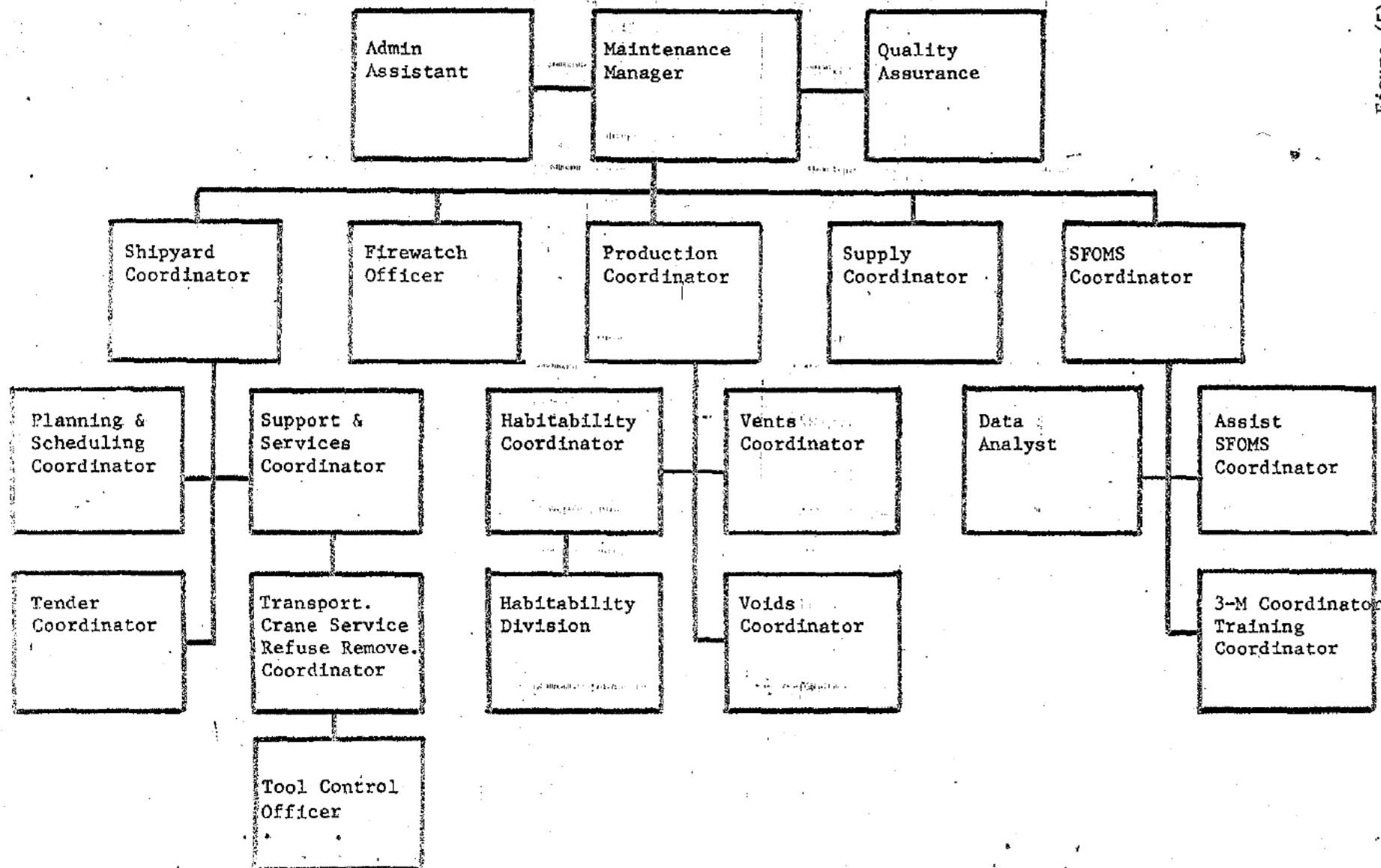
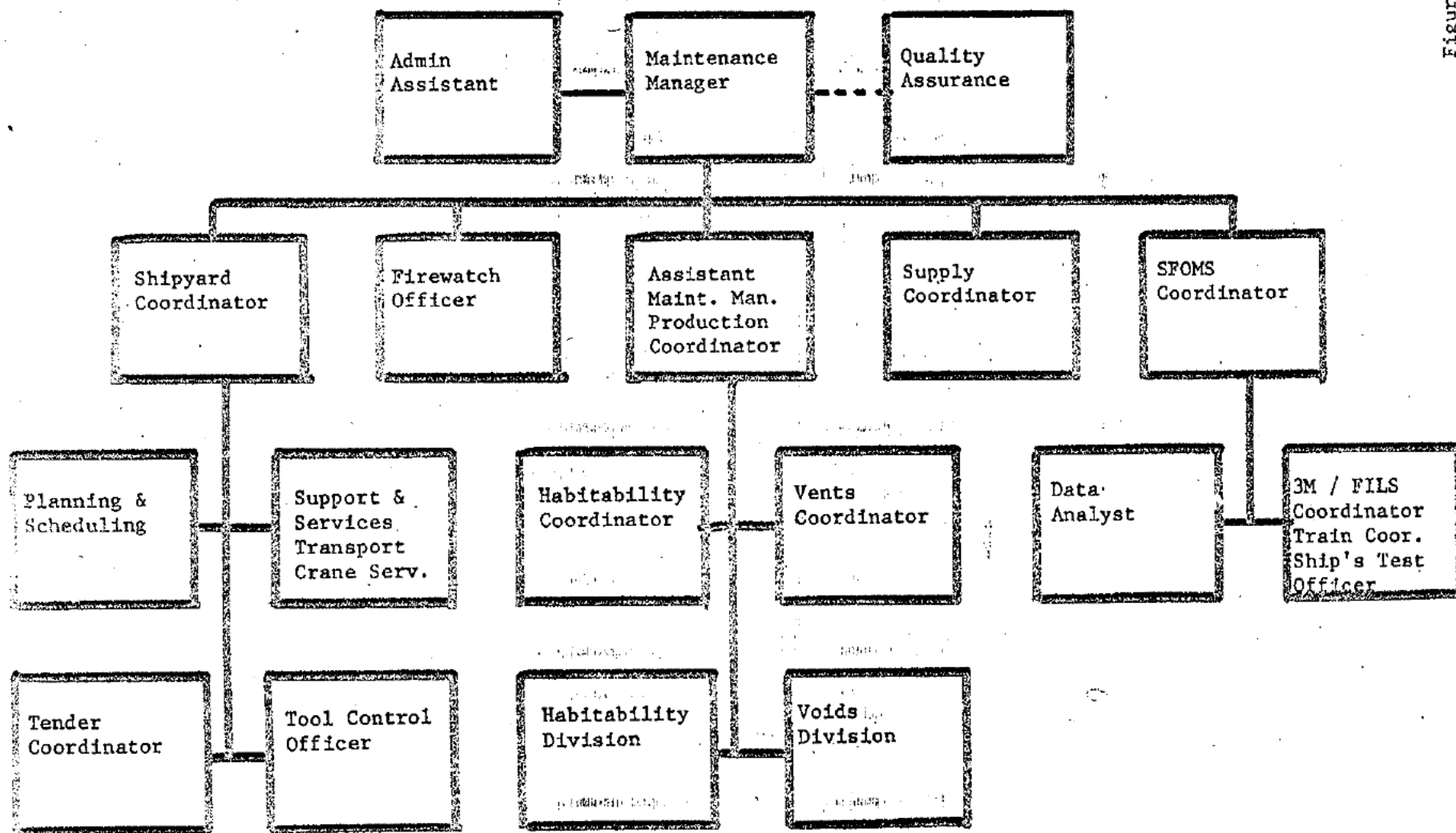


Figure (5)

SFOMS ORGANIZATION

Figure (6)



USS RANGER CV-61

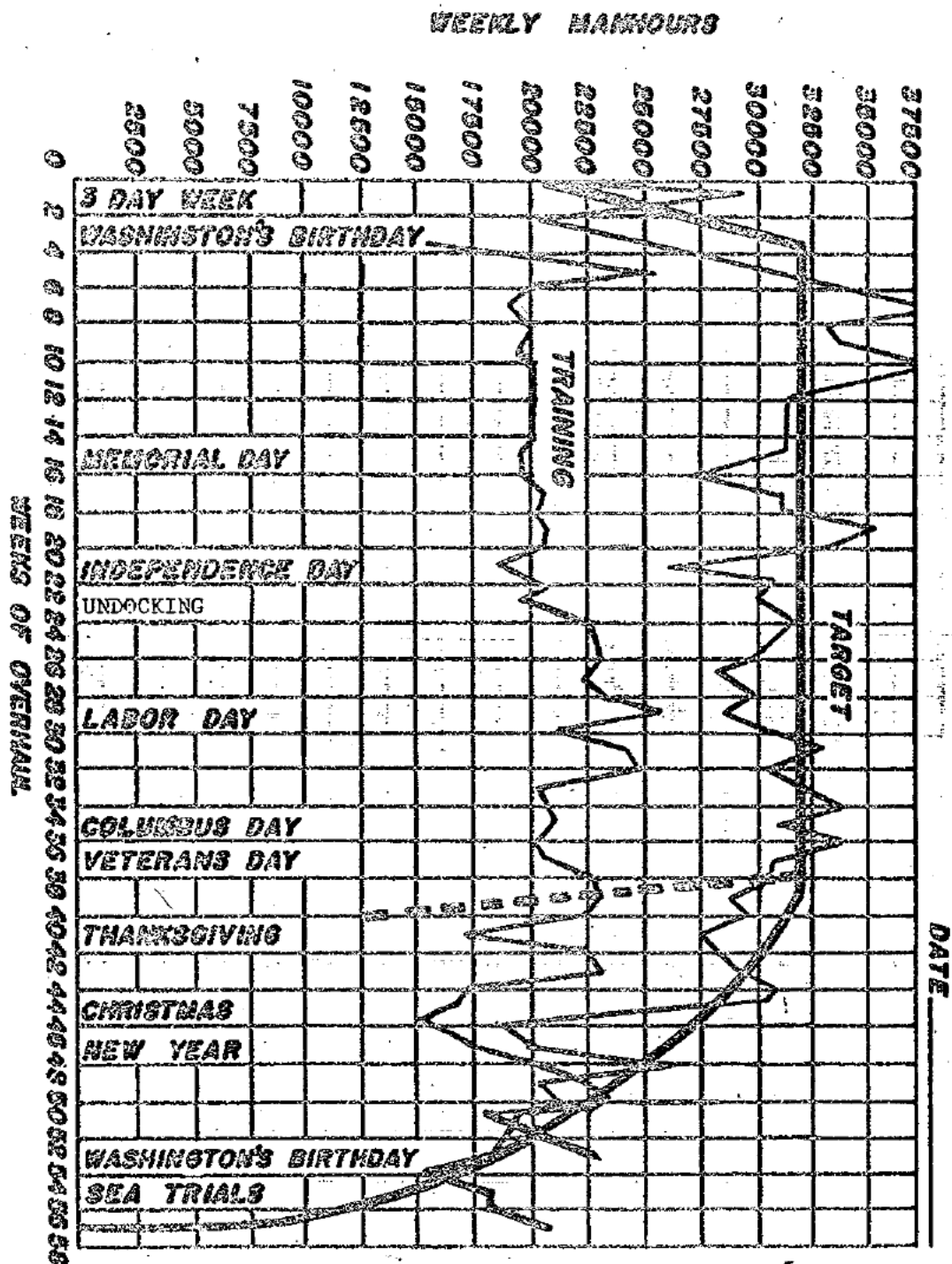


Figure (7)

SFOMS COORDINATOR

During the conception and implementation of the SFOMS Department in RANGER, the SFOMS Coordinator played a vital role in establishing departmental work routine, setting guidelines and establishing manhour targets for the overhaul.

Figure (7) is RANGER's weekly industrial manhour chart depicting the weekly target and achievement. Holidays, weekends, and sea trials should be considered when deriving this target.

After the department was organized and functioning, the job of SFOMS Coordinator depended primarily upon the incumbent's own initiative. The SFOMS Coordinator in RANGER became involved in several projects, many of which were directly related to the welfare of the crew. Had he not provided the much needed impetus and personal attention, these projects may not have succeeded. Some examples are: the coordination of the various reserve units in the Bremerton area during their drill weekends to accomplish shipboard industrial work; the organization of a shipwide effort to assist in the refurbishment of the enlisted dining facilities; the CPO lounge; and the crew's library, and also identification of causes and the repair of broken windows in the Bridge and Primary Flight Control.

The SFOMS Coordinator also worked closely with the Data Analyst, who was required to track all the hours expended by ship's force during the overhaul. The Data Analyst also assisted the SFOMS Coordinator in preparing weekly progress reviews for the Commanding Officer, quarterly progress reviews for the Type Commander and SYSCOM representatives, and briefings for other visiting dignitaries.

DATA ANALYST

The function of the Data Analyst was to collect and interpret the total manhours expended by the ship's force during the overhaul. This data was disseminated to all departments on a weekly basis in SFOMS Report 10.

To input data into Report 10, two forms are required - the SFOMS Input form (PSNS Manual form 4790/2K-2) and the Ship's Maintenance Action form (OPNAV 4790/2K) of which only blocks 4 and 5 are needed. It is recommended that a combined form be made, utilizing blocks 4 and 5 of the 2K and the entire 2K-2. This will considerably reduce the required paperwork.

Another problem occurred when one work center submitted work via the SFOMS Reports for another work center to accomplish, which then increased that department's work load without their knowledge or approval. This was resolved by having all inputs initialed by the leading petty officer of the accomplishing work center. It is recommended that this procedure be practiced during future overhauls.

SFOMS TRAINING / FILS / 3-M / TESTING OFFICER

The Training / FILS / 3-M and Ship's Test Officer worked closely with the Shipyard Coordinator and the SFOMS Coordinator. In his capacity as SFOMS Training Officer he coordinated the scheduling of the school quotas for the special training required in a shipyard, i.e. tiling, lagging, etc. As FILS / 3-M Officer, he worked closely with the ship's 3-M Officer, requesting FILS and 3-M documentation to ensure PMS coverage of both newly installed equipment and those items which had previously been without PMS coverage. As Ship's Testing Officer, he maintained and disseminated testing procedures and the Test Plan of the Day, which was formulated at the Test Plan of the Day meeting attended by both shipyard and ship's force representatives.

PRODUCTION COORDINATOR

The Production Coordinator had two distinct areas of responsibility during USS RANGER's overhaul. One responsibility was the overall supervision of the SFOMS production effort, as accomplished by the Habitability, Voids, and Vents Divisions. The other responsibility was to coordinate the installation of sufficient officer, CPO and E-1 through E-6 bunks to achieve the total onboard count required by higher authority.

Problems and Solutions:

A. Habitability Division: The initial problem for Habitability was its mission, i.e. what should be expected from a 65 man division confronted with the need to completely refurbish 85 heads? Originally, it was decided that the division would extensively refurbish all heads, making them as cosmetically beautiful as possible. After two months it was determined that this effort was unrealistic because there were too few people assigned to the task and the TAD personnel assigned to Habitability did not possess the requisite skills and expertise. The division's mission was then redefined to: restore all equipment to serviceable use; ensure that all deck coverings were sound, i.e. reseal terazzo or replace with PRC; and to remove corrosion and repaint. Relieved of cosmetic pursuits, Habitability Division began to make progress. The installation of PRC was a reoccurring problem. PRC is a product that gives every indication of being excellent for shipboard use, however, the procedures for PRC installation must be conscientiously adhered to. The process appears quite simple, but ship's force could never fully master the technique and consequently, much work had to be redone. TECHREP assistance; intensive managerial oversight, and educational attempts only partially solved the problem. The best and perhaps only solution would be to have a full-time TECHREP onboard to supervise and Q.A. PRC installation. Another problem concerned the custody of the heads. At the beginning of the overhaul, Habitability assumed custody of all heads. All the unused heads were locked up, a decision which proved to be a mistake. The material condition of the locked heads rapidly deteriorated, and the open heads never received the maintenance that they required due to extensive use. On cruise there is usually a full man day spent each day cleaning/maintaining each head. Habitability division, however, did not have sufficient personnel to do this and they were barely able to maintain the status quo, let alone make headway. Whether a head is used or not, it still requires daily cleaning and maintenance. The solution to the problem is for Habitability to not assume custody of a head until ready to commence work in the space, and then to return custody of the head to the parent division when work is completed.

B. Voids Division: One month prior to the commencement of COH, Voids Division was formed consisting of 49 men. The division was tasked to refurbish the ship's voids and to dewater / degrease voids to enable industrial work to be performed in these spaces. This latter task required approximately 25 men, 10 pumps, and 1200 feet of hose.

The inability of ship's force to control void openings/closures was a reoccurring problem throughout the overhaul. As soon as the shipyard work-

ers came aboard, they commenced opening voids throughout the ship in order to conduct their assigned work. In short order, the open voids became trash receptacles and no easy solution was found to prevent this occurrence. Closure of floodable voids prior to undocking was a task of significant magnitude, since much industrial work was in progress in these spaces. The problem repeated itself prior to sea trials when all voids were required to be properly sealed. An extensive coordination effort was required in both instances as void closures became shipyard / ship's force evolutions. Voids Division spearheaded the efforts by procuring the required gaskets, nuts and washers from the shipyard; directing and supporting the cleaning of voids by owning divisions; scheduling Q.A. inspections; sealing the voids; and maintaining closure logs.

Voids Division was initially tasked with the refurbishment of all eighth deck voids. This project was quickly determined to be impractical. The division did not possess sufficient manpower nor the specialized equipment, such as air movers, scaffolding, etc. required for a task of such magnitude. Instead, the division's efforts were directed toward refurbishment of JP-5 tanks and all third and fourth deck voids - tasks which were successfully completed on schedule.

C. Vents Division: The 30 man division was tasked with cleaning all 720 ventilation systems aboard RANGER as well as installing Ship Alteration 3371 D, which necessitated cutting access holes and installing cover plates in the ventilation ducting. To complete this package, Vents Division was required to clean 12.6 systems per week. By the fourth month of the program, the division was only completing 4 to 8 systems per week. Therefore, an incentive system was established. Within 45 days, the division was completing 20 systems by Thursday afternoon of each week and consequently received special liberty on Friday (less duty section). The entire package was completed three months early.

The only other problem experienced by the division concerned the cover plates installed in support of Ship Alteration 3371 D. The plates were constantly removed and misplaced. Every conceivable means was used to deter removal; pop rivets, spot welds, etc. but to no avail. No acceptable solution was found and incorporation of SHIPALT 3371 D is not recommended until an engineering redesign can be effected.

D. Berthing: Three months into the overhaul COMNAVIAIRPAC directed that 4400 E-1 through E-6, 281 CPO, and 454 officer / TECHREP berths be provided in USS RANGER. Available data indicated that the ship had 4276 E-1 through E-6 berths onboard; thus, an apparent shortfall of 124 bunks existed. PERA (CV) was requested to provide a computer analysis for various areas of the ship concerning the ratio of bunks to the number of commodes, urinals, showers, etc. This information identified those areas of the ship where sanitation facilities could support more personnel. The 03 level forward and 3rd deck aft were selected for the 124 bunk additions, and rough blueprints were drawn to scale to verify feasibility. NAVSEC was requested to conduct a ship-check and draw working blueprints, including a list of required materials.

COMNAVAIRPAC purchased the materials and forwarded them to the ship for installation by ship's force. Each department was required to install their own bunks, including qualifying welders for hot work. The Production Coordinator provided major material requirements and technical advise, but nut and bolt requirements were departmental responsibility. To ensure accountability, mattresses were not forwarded to the ship, nor were lockers, until after the overhaul. Concurrent with this installation, an accurate count of onboard bunks revealed that the original figure of 4276 available bunks was in error. In fact, only 3996 enlisted bunks were installed. Therefore, permission was granted to obtain additional bunks from ex-Oriskany (CVA-34), berthed at PSNS. The blueprint of each berthing space was compared to the existing space configuration and everywhere a bunk had been removed, another one was reinstalled utilizing material from ex-Oriskany or salvaged bunks from RANGER. The latter were obtained because the NAVSEC blueprints for installing the original 124 bunks required replacement of 51 existing modular bunks with new Northampton bunks.

Fourteen additional officer bunks were required to be installed. This was accomplished by locating adjacent staterooms at ends of passageways separated by that passageway. Two, two-man staterooms were then redesigned into one six-man bunk room utilizing 24" wide stateroom furniture vice the existing 36" wide furniture. The size of the new bunkroom was larger than that of the combined two staterooms for the space in the passageway was incorporated into the bunkroom. For economic reasons, only those staterooms were utilized that did not require removal / relocation of sinks. After feasibility blueprints were drawn by the Production Coordinator, NAVSEC converted them to working blueprints. The conversion was beyond ship's force capability and became a SUPSHIP San Diego project.

No additional bunks were required in CPO berthing spaces. As requested, a package of recommended improvements to the CPO berthing spaces was prepared and forwarded to COMNAVAIRPAC for action at a later date.

Recommendations:

A. Habitability Division: The division should not be tasked to do any cosmetic or corrosion control work. This is painstaking work that requires intense supervision and more motivation than is available in a TAD division. Habitability should be a 40 to 50 man division responsible for plumbing, lighting, metal work, PRC installation (with 100% TECHREP assistance), and maintenance trouble calls. Corrosion control, painting and daily maintenance of heads should be conducted by owning divisions.

B. Voids Division: The division should be organized as a TAD division within the Engineering Department vice the SFOMS Department. The majority of the tasking is engineering related and the majority of personnel are drawn from the Engineering Department; hence, better coordination of the division's work package would ensue.

Refurbishment of lower deck voids should be scheduled for accomplishment by the shipyard. The shipyard possesses the required equipment, e.g. scaffolding, air movers, sandblasters, etc. and the personnel trained to handle

tasks of this magnitude.

All support equipment, e.g. pumps, hoses, paint sprayers, etc. should be well marked and the serial numbers recorded. No support equipment should be left unattended for even the shortest periods of time.

Owning divisions should retain responsibility for cleanliness and closure of assigned voids, as assisted by the Voids Division.

An incentive program should be utilized to spur production in void refurbishment. Production can be accelerated by establishing weekly goals, and then granting special liberty for the remainder of the week after the weekly goal has been realized. Understandably, the weekly goals must be realistic.

Costly replacement of static dehumidifiers can be defrayed by reactivation (moisture removal of reuseable desicans). The desicans should be placed in a drying oven, such as the electrical rewind bake out oven, heated to between 325° and 350° F for four hours to remove entrained moisture. The desicans can be reused in the voids after reactivation.

SHIPYARD COORDINATOR

The Shipyard Coordinator is the direct link between the SFOMS Maintenance Manager and the shipyard in virtually all matters concerning the shipyard facet of the overhaul. It is necessary for him to have a knowledge of shipyard procedures and effect a continual liaison with the TYCOM Material Officer.

In order to effect an orderly and well planned overhaul, the Shipyard Coordinator should be aware of the key repair work and alterations long before the overhaul commences. The key document governing the accomplishment of work in the shipyard is the SARP (Ship Alteration Repair Package). The SARP is prepared several months prior to commencement of the overhaul. It is important that the various departments on the ship review this document to ensure full coverage of items to be repaired. The shipyard job orders are written from the SARP.

The Shipyard Coordinator should organize his staff early enough so that the key members can be indoctrinated in their responsibilities. Prior to commencement of the overhaul the Support Services Officer is tasked with the services related to "setting up" the ship to commence industrial work. As stated elsewhere this involves shore services as well as tools for ship's force work. Approximately one month into the overhaul the Planning and Scheduling Officer's responsibilities increase significantly due to the myriad of paperwork required to accomplish the production work. The Shipyard Coordinator's attention is directed toward following the rip-out phase of the overhaul and looking ahead to the re-installation of equipment.

It is paramount to look for potential problems early because of the time required to correct and implement design changes. Problem resolution is accomplished by communicating with the Assistant Repair Officer, the Shipyard Carrier Plans Officer, or Type Desk (Code 214) because they all essentially issue the directives to the production area. New ship alterations, especially "first time" ship alterations, are always potential problems from the design aspects to the procurement and receipt of appropriate material. The predominant problem in the repair area was material which, in some cases, was delivered late.

It is the Shipyard Coordinator's responsibility to provide the information required to inform the Type Commander of the overhaul progress. The weekly SITREP is the vehicle utilized for this purpose.

Many problems that occurred were those of liaison with the cognizant codes/shops at the shipyard. It is advisable to be thoroughly familiar with the shipyard organization and inter-code relationships.

PLANNING & SCHEDULING

The Planning and Scheduling Officer was responsible for maintaining a master file and the routing of all shipyard job orders, maintaining Assist Ship's Force Work Requests, maintaining records and resolving conflicts con-

cerning SHIPALTs and Repairs, maintaining records of Supplemental Work Requests, providing inputs to the weekly SFOMS Brief, and the formulation of the weekly SITREP.

Each department assigned a tracking officer for each SHIPALT under their cognizance. The Commanding Officer was initially briefed on each SHIPALT by the cognizant tracking officer and periodic updates were presented at the weekly SFOMS Brief. Additionally, a locally prepared tracking form was submitted bi-weekly to the Planning & Scheduling Officer by the SHIPALT tracking officer for updating the SHIPALT master status board.

The Planning & Scheduling Officer was frequently asked by ship's force when will specific spaces be affected by shipyard work. A partial answer to this question is found in the SHIPALT - Compartment Sequence listing, provided by PERA (CV). However, this listing is approximately 60% accurate and the only other alternative is to review each individual job order. It is recommended that the ship require the shipyard to provide a list of spaces affected by shipyard work and to identify the shops that will be completing the work. The primary contact points for the Planning & Scheduling Officer are the Type Desk (Code 214) and the Assistant Ship Repair Officer (ARS).

TENDER COORDINATOR

The Tender Coordinator serves as a point of contact for liaison between the departments and non-shipyard repair activities. Most work is completed by IMA's, such as the various fleet maintenance assistance groups, or is subcontracted by them. Availabilities are arranged by the Type Commander throughout the overhaul period. Work to be completed must be of a ship to shop nature. Since the work is completed at a site remote from the shipyard, the Tender Coordinator must aggressively pursue the status of each job. It is easy for some to become lost in the shuffle. The major problem encountered is transportation to and from the repair activity. The order of preference for speed and reliability is as follows:

- A. Naval Air Logistics flights (C-9)
- B. Military Airlift Command (MAC)
- C. Dedicated Surface Transportation (truck)
- D. Quick Trans (Usually gets there, but not as the name implies)
- E. Air Parcel Post (faster than (D) but less reliable)
- F. Normal supply channels

TRANSPORTATION OFFICER

This billet was filled by a Lieutenant Junior Grade who, prior to the overhaul, was Transportation Officer assigned to Deck Department. Each ship will only be issued the PACFLT allowance of seven vehicles, and no extra vehicles will normally be available from PSNS. Limited additional support is available from Sand Point. A driver was assigned to each vehicle and each driver was responsible for his vehicle. Administrative needs were filled by using the OOD's truck as other vehicles were always in demand for overhaul requirements. The Transportation Officer also served as Parking Coordinator. Flexibility is the key word for parking at PSNS, as the system is constantly changing.

SUPPORT & SERVICES

Support & Services is a vital link between ship and shipyard, especially prior to and immediately after the ship's arrival. While one officer is adequate for the billet throughout the overhaul, an assistant is desirable during the first several months of the overhaul.

Advance trips to PSNS for liaison purposes are recommended and arrival in PSNS a few days prior to the ship's arrival is mandatory. Advance trips allow for OJT with one's counterpart on the carrier than undergoing overhaul, and provides an opportunity to meet the key shipyard personnel with whom Support & Services will be dealing. The primary shops with which Support & Services will be concerned are Shop 99 (Temporary Services) and Shop 72 (Riggers).

Immediate items that were procured or arranged by the advance party prior to the ship's arrival were fire bottles, fire watch hardhats, goggles, stowage space, telephone availability, and pierside service capabilities. Support & Services also coordinated the assignment of shipboard spaces for use by the shipyard trades. A detailed agreement between the ship and shipyard should be reached concerning exact procedures for transfer of ship's spaces for shipyard use and what rehab will be provided by the shipyard prior to vacating the spaces. In general, time becomes short towards the end of the overhaul and rehab takes low priority. Departments or divisions should be discouraged from "loaning" shipboard spaces for shipyard workers to use since misunderstandings quickly arise. All space agreements should be formally sanctioned by the SFOMS Maintenance Manager and Assistant Repair Officer.

Support & Services also coordinated repairs to the Auxiliary Personnel Lighter (APL) used for off-ship berthing and messing. The waterfront provides only services (steam, water, etc.) to the APL and the shipyard Barge Coordinator must be contacted for repairs to the APL itself. During one of the advance trips to PSNS, the APL should be inspected to ensure that its material condition is satisfactory. RANGER had intended to feed on the APL as soon as possible after arrival in Bremerton, only to find that the APL galley was inoperable.

TOOL CUSTODIAN

A master chief petty officer was assigned the billet of Assistant Transportation / Tool Control Officer for the entire period of overhaul. Historically, considerable dollar amounts of tools are lost during a complex overhaul. Strict tool accountability is mandatory and for this reason it is advisable to assign a custodian who will be onboard the entire overhaul. Additionally, the master chief possessed the only charge card allotted RANGER for drawing tools from the shipyard on a sub-custody basis. If this card is lost, all tools must be returned to PSNS for inventory and reissue.

The largest percentage of tool loss experienced by RANGER consisted of the smaller / inexpensive items, e.g. hardhats, goggles, air hoses, etc. In the aggregate, however, these lost/damaged items can amount to considerable

SUMS.

FIREWATCH DIVISION

A. Mission/Organization

Firewatch Division was established to provide firewatch standers for all welding/hot work to be accomplished aboard ship. The division was initially organized into three - eight hour shifts to coincide with the shipyard's work schedule. Firewatch tasking slowly increased but the number of assigned personnel remained constant. By the sixth month of overhaul, the demand for watchstanders outstripped the available personnel. Consequently, the division was reorganized into two shifts, each working a twelve hour schedule with liberty granted every other week end. After two months, the division returned to the three shift schedule due to a slight decrease in welder workload and the assignment of additional watchstanders as new personnel reported aboard.

B. Personnel Administration

The majority of officers and supervisory petty officers were assigned to Firewatch Division for the entire period of overhaul. Non-rated personnel were assigned as firewatch standers for 90 day TAD periods, with some assignments of longer duration. Personnel records were screened and those individuals with grades of 2.8 (or below) in military behavior were not accepted into the division. Misfits and non-performers were expeditiously returned to their parent divisions. Military discipline was emphasized and shipboard rules and regulations were strictly enforced. Personnel inspections (working uniform) were conducted on a weekly basis. Officers and supervisory personnel conducted frequent routine roving patrols to ensure that firewatch standing was conducted in an alert, conscientious manner. These measures were considered essential for managing a division unwieldy in size (at times exceeding 245) and comprised primarily of unexperienced, non-rated sailors required to perform independently throughout all areas of the ship.

C. Scheduling

Firewatch requirements varied throughout the overhaul. An initial heavy demand occurred during ripout of the engineering spaces. Subsequent demands for firewatch standers occurred during periods of intensive production efforts, especially prior to the LOE's. Daily and weekly demands also varied. Accurate advance scheduling of more than a week was extremely difficult. The general foreman of the welding trades was tasked to provide a projected estimate of workload requirements each Wednesday and an updated work schedule by Thursday evening. The Firewatch schedule was written each Friday for the subsequent seven day period. Every effort was made toward maximum personnel utilization, e.g. training, leave, liberty, etc. rather than have an excessive number of personnel standing by in the Firewatch pool. During evenings and weekends the SFOMS duty officers kept abreast of the Firewatch Division's workload, augmenting the division as necessary by utilizing SFOMS duty section personnel.

D. Discussion

The temporary TAD nature and independent duty of firewatch standing does not permit the forming of group identity or a spirit of common endeavor as experienced in other divisions. The hours are long and the work is boring, producing no personal feedback or sense of accomplishment.

E. Recommendations

Personnel should not be assigned as firewatch standers for periods in excess of ninety days. Morale, effectiveness, and military behavior deteriorates beyond that point. Supervisory petty officers should be assigned for the duration of overhaul. The task of managing a considerably large number of young, inexperienced, TAD personnel necessitates the existence of a nucleus of well-trained petty officers dedicated to meeting the mission of Firewatch Division. Personnel administration, discipline, training, and safety procedures need to be constantly emphasized due to the considerably high turnover rate of division personnel. The most capable, competent petty officers should be assigned to the swing, graveyard, and weekend shifts. The effectiveness of the average watchstander is directly proportional to the amount of "visible khaki" onboard. Constant supervision is mandatory! Problem personnel should be assigned to the day shift where closer and more frequent supervision is available. It is also recommended that all firewatch standers be placed in a no duty status. Unless there exists an ample availability of personnel, the firewatches will stand many hours of duty. The need for "alert" firewatches obviates the benefits derived from utilizing them for working parties, pier watches, etc. Constantly changing workload requirements will necessitate the existence of a pool of watch standers. A scheduling excess of 10-15 percent on weekdays and 15-20 percent on weekends will meet most unexpected requirements. Firewatches in excess may be secured after it has been determined that the requirements for the shift have been met.

F. General

Firewatch Division on RANGER enjoyed unparalleled success when compared to carriers having previously undergone overhaul at PSNS. The fire incident rate and subsequent dollar loss aboard RANGER was negligible. This success is attributable to active command support and the assignment of mature, motivated officers and petty officers who established and maintained a well trained and well disciplined military unit.

QUALITY ASSURANCE

Quality Assurance was a department independent from, but administratively supported by, the SFOMS Department. It consisted of a senior commander and four senior petty officers tasked with inspecting all completed ship's force key operations and the shipyard 500, 600 and 700 series key operations.

Quality Assurance Department received a weekly SFOMS Report which listed rescheduled and completed key operations. The shipyard overhaul package was tracked via locally prepared job summary forms. Ten percent of the shipyard key operations were spot checked by RANGER's Quality Assurance Department, and the remaining ninety percent were checked by departmental quality assurance inspectors on a collateral duty basis.

Due to the nature of a key operation, many were not completed until the last few weeks of the overhaul. The time lag between the actual accomplishment and the administrative reporting of the key operation made it extremely difficult to inspect those remaining key operations prior to the end of the complex overhaul. A recommended solution is to distribute job summaries to departmental quality assurance inspectors during the last month of overhaul and have them report on a job completion basis vice a key operation completion basis.

DEPARTMENTAL INPUTS

AIMD DEPARTMENT

IM-1 Division

It is strongly recommended that AVCAL/rotatable pool support for the C-1A be carried aboard ship. NAS Whidbey was tasked to provide facility, GSE, AIMD, and supply support as available. The air station was cooperative and very responsive to all stated RANGER C-1A needs that were within their capability to provide. This supportive stance notwithstanding, the time lag (one day minimum) for acquiring NAS Whidbey assets makes local support imperative. There is no local support available, however, other than that provided by the carrier undergoing overhaul. Numerous instances occurred wherein it required three days to obtain the necessary support to return the C-1A to operationally ready status. During summer seasons, it was routine for the surface trip to NAS Whidbey to require 8 hours (one-way) because of traffic and ferry delays.

If an engine change is required, a crane and operator may be obtained open purchase either locally or in Seattle. PSNS equipment availability should not be depended on.

Some avionics support is available open purchase at the commercial aviation facilities in the Boeing Field complex in Seattle.

IM-3 Division

A. Background: Prior to the arrival of RANGER in the PSNS Shipyard, IM-3 Division scoped all assigned spaces for work to be accomplished, i.e. chipping, lagging, painting, and retiling. All jobs were prioritized with the most important being the rehabilitation of all avionics/armament work centers. New lighting fixtures (6 bulb) were ordered as replacements for existing 3 bulb fixtures in all work centers. Flexiflor floor covering was purchased for all work centers to replace existing Vinyl floor covering (no longer approved for shipboard installation). Power panels (EPOP II) were ordered so as to upgrade all work benches to standard electrical configuration. All test equipment (special and general purpose) was off-loaded in San Diego to be overhauled, upgraded, and recalibrated prior to RANGER's return. Additionally, 10 calibration technicians were transferred to Commander, Naval Air Forces Pacific Detachment One to support this operation. The remaining test consoles left onboard were covered to preclude intrusion of dust, paint chips, etc. for the duration of the rehabilitation efforts. Three calibration technicians remained onboard to handle meter and gauge calibration requirements while in the shipyard.

B. Problems and Solutions: Upon arrival at Puget Sound Naval Shipyard, it was determined that due to the heavy TAD requirements levied upon the AIMD Department, i.e. shore patrol, mess cooking, compartment cleaning, and TAD assignments to SFOMS, it would be impractical to continue operating as individual divisions. As a result, the Production Division was formed to handle all space rehabilitation efforts. IM-3 Division Officer and Chief Petty Officers headed up this division. The Production Division was organized into 5 work center rehabilitation teams, a central tool room staff, and

a calibration laboratory team. As work progressed and personnel became proficient in various special skills, i.e. lagging, tiling, spray painting, etc. these teams became specialized in their functions.

Shortly after commencement of all refurbishment work, it became apparent that due to the reduced number of personnel remaining after TAD requirements were met and the underestimation of time required to prepare spaces for repainting and retiling, all AIMD spaces would not be completed by the end of overhaul period. Consequently, a reassessment of jobs was undertaken and it was determined that the AIMD/CVW-2 joint responsibility spaces would have to be deleted from the AIMD work package. Berthing compartments, AIMD work centers and all passageways were rescoped and rescheduled accordingly.

It became apparent that production levels were not meeting required deadlines, due to many reasons; i.e. 10 hour days, tediousness of work, lack of short term goals, etc. Various methods were tried to improve motivation of individual teams. The method that was most successful was Management by Objectives. Realistic, attainable goals were established for each team and monitored on a daily basis, charts were kept in the division office and updated by team supervisors as jobs were completed, and a system of reward for early completion was established. This method worked so well that it was utilized for the rest of the overhaul period.

In the avionics/armament area, various ship alterations were monitored, i.e. Mini-SACE; VAST, S-3A Avionics Support, COLD-plate Cleaning Stations, etc. All problems encountered were quickly resolved by utilizing the Naval Air Engineering Center's Aviation Ship Installation Representative to coordinate revisions/repair actions through the shipyard. The Flexiflor floor covering ordered for all avionics work centers was unobtainable due to a lengthy factory strike, and a substitute covering, LONMAT, was obtained by direction of COMNAVAIRFAC. New work benches were ordered for the Calibration Laboratory so as to upgrade facilities to established standards. To date, the new NEB-2 benches have not been received and this will cause some delays in setting up the Calibration Lab upon return to San Diego.

The Consolidated Aircraft Maintenance Site Activation Plan (CAMSAP) established prior to entering the shipyard and monitored by Naval Air Engineering Center, Lakehurst, N.J. was extremely helpful in the scheduling of the newly acquired avionics support equipments to meet shipyard delivery dates, coordination of the installation, verification and certification efforts of contractors, shipyard and NARF personnel, and in resolving numerous delivery, deficiency and verification discrepancies.

C. Recommendations: Identify and order all long term items required to refurbish work centers before entering the shipyard (i.e. light fixtures, work benches, floor covering, etc.).

Establish a rehabilitation work force before entering the shipyard, identify special skills required, and request shipyard available schooling so that minimum delays will be encountered in initiating the industrial effort. A good start will ensure you can devote your time to resolving daily difficulties rather than having to stop and reorganize your work force or methods.

Designate a different officer to monitor ship alterations. It became difficult to devote much time to SHIPALTs when rehab efforts were in the forefront of all departments' attention.

Fully utilize the assigned NAEC/ASIR. He has numerous methods of expediting repair actions, resolving problems with the shipyard, and is a direct line to higher authority for funding and guidance. You can circumvent a great deal of paperwork and associated delays through him.

Utilize the CAMSAP meetings to the fullest. For best results, don't pull punches with the attendees (i.e. contractors, Navy Reps, NARF personnel). Force them to respond to your needs. Follow up actions discussed with messages and you'll get desired results.

Establish manpower requirements for newly acquired equipments long before start of the overhaul period. It's a long, drawn out process and if you don't you will end up with many systems you can't support upon leaving the shipyard.

Maintain good working liaison with the assigned air wing. This is especially helpful during verification/certification efforts in borrowing squadron personnel and Weapons Repairable Assemblies (WRA's) needed to facilitate this evolution.

Establish a training plan for your division personnel early on, request quotas, and adhere to it no matter how bad it hurts your rehab efforts. This way you can assure yourself at least some qualified techs to maintain your avionics systems upon departure from the shipyard.

AIR DEPARTMENT

Background

Management of an overhaul package is a complex undertaking. Key factors involved in the project included: dynamic planning, accurate job scoping, effective key operation definition, keen understanding of the SFOMS reporting system and its relationship to higher level management decisions, and finally, continuous re-evaluation of priorities and liaison to ensure continuation of important projects.

Recommendations

Early identification of personnel with previous COH experience is mandatory. Solicit their expertise in planning and estimating functions.

Identify ship's force manpower availability, taking into account extra TAD requirements in support of firewatches, vents, voids, and habitability.

Build and define the work package. Consider manpower availability for both ship's force and shipyard. Prioritize requirements. Recognize that lower priority jobs will be deferred or additional ones added as money and manpower restraints fluctuate.

Once the work package is defined, break each job down into key operations. Since key operations are milestone measuring tools for managers and goals for the work force, it is important to limit key operation definition to the simplest easily recognizable tasks which are steps toward job completion. Plan the work load so that your smallest sized work force can complete a small number of key operations per week. Such definition provides the manager with visible progress records and the work force with goal accomplishment satisfaction.

Consider the entire ship's work package in your planning. Scheduling work backwards from the end of the overhaul is not an unrealistic approach. Plan painting and tiling for the last two to three months of the overhaul so that industrial type work does not destroy your early productivity. A large share of effort should be expended in preparation of spaces and equipment for painting. Extra manpower programmed for rust and corrosion removal is time well spent. Removing old tile, etc. can be programmed earlier in the overhaul period. Give yourself time for thorough quality assurance inspections and for inserting additional work as money and the need arise. Allow time for repair of machinery where the extent of damage or wear cannot be determined by surface inspection. Set aside time for cleaning and field day, too.

Many factors essential to quality management of the production effort have already been discussed. It is imperative that middle managers have a keen understanding of how their inputs will effect higher management decisions. Strive to portray an accurate account of real asset expenditures including manpower and money. Ensure problem areas get proper identification so that assets can be focused where necessary.

COMMUNICATIONS DEPARTMENT

Equipment Overhaul

RANGER's Electronics Material Officer was tasked with the total electronics package and those departments affected provided (TAD) support to the Operations Overhaul Division.

Test Plan Of The Day (TPOD)

Either the Communications Officer, Radio Officer, or Facilities Control Chief Petty Officer attended the shipyard's weekly Test Plan Of The Day meetings. This meeting of shipyard and ship's representatives was an invaluable aid for identifying key operation deficiencies, future planned work, and in general helped smooth the overhaul progress. The Communicators were often able to "coordinate assaults" with the EMO representatives as well as to carry concerns forward at the request of the shops working in Communications spaces.

Teletype Overhaul

RANGER made arrangements for working space and support from DATC, San Diego, where teletypes for class "B" overhaul and two repairmen were stationed for the duration of the overhaul. Having the ship's force overhaul these equipments onboard in Bremerton is not practical due to power losses, space interference, etc.

Recommendations

- A. XEROX 7000: Two were installed in December, 1977 by being lowered through an access hole which had previously been cut in the flight deck earlier in the overhaul. The hole must be at least 5-1/2 x 3'.
- B. Semi - Automated Message Reproduction and Distribution System (SAMRADS) Overhaul: Recommend frequent monitoring and follow up of equipment going through EMF. Accurately track the installation of components scheduled for replacement.
- C. 8-level Teletype: The 8-level Teletype, SRA-33, should also be overhauled. Try to plan having the unit back in the spaces in time to allow for several weeks operation and de-bugging.
- D. Antennas: Beware of re-installing antennas too far in advance of sea trials. Mobile shipyard cranes can easily break them off.

DECK DEPARTMENT

Problems and Recommendations

Assessability to the hull exterior and sponsons by ship's force from pierside is nil due to the extremely limited availability of YC's or cranes and the large number of service lines running over the sponsons. An acceptable solution to this problem was not found and the majority of the sponsons had to be completed after COH. Recommend that future job orders for painting the sides be written to provide crane services/YC support to ship's force and to include "areas over sponsons, aircraft elevators and overhangs, and supports".

The JLG Man Lift provided by COMNAVAIRPAC via contract with PHILPOTT Company was inoperable 80% of the time. The servicing agent (PHILPOTT) located in Seattle was slow to respond to RANGER's needs and this aggravated the problem of assessability to the sides by ship's force. Recommend each carrier purchase and maintain their own JLG Man Lift.

Adequate covered space with electricity and water services was not available for overhauling the ship's boats. Recommend that space for at least one boat with electrical/fresh water services be provided by the shipyard for each ship undergoing overhaul.

DENTAL DEPARTMENT

Background

The yard period coincided with this department's scheduled five year equipment replacement cycle. Therefore, all of the new equipment was pre-selected and ordered for delivery to PSNS Supply Center prior to entering the shipyard.

The tile deck in the Dental Operating Rooms did not conform to OSHA standard for spaces where mercury is handled. Therefore, a decision was made to replace the deck with PRC as opposed to seamless tile.

Problems and Solutions

The removal of all equipment from the dental spaces required total curtailment of all shipboard dental treatment. To continue treatment of the ship's force, provisions were made to use the facilities of Naval Regional Dental Center, Bremerton.

Total replacement of the deck required removal and secure storage of dental operatory equipment. This was accomplished by utilizing a bomb storage magazine. The space is also equipped with an elevator for transporting surveyed material to the hangar deck and bringing new equipment from the hangar deck to the storage area.

ENGINEERING DEPARTMENT

Problems and Recommendations

A. Installation of new equipment/components requires someone in each department to be assigned the responsibility of coordinating changes in PMS coverage, COSAL, and technical manuals.

B. Fire zone boundaries should be established in a written agreement between the ship and shipyard. The boundaries must be enforced (no service leads or anything must preclude rapid closure of doors and boundaries). Any waiver of a boundary should be for a specific period and be signed by Shipyard Repair / Production Officer and the ship's Commanding Officer.

C. Ripout of insulation and repair work in machinery spaces cannot be undertaken at the same time if asbestos materials are involved. Therefore, a coordinated plan must be established between shipyard and ship's force.

D. The Engineering Department should have a single individual assigned to keep track of ASF status. In general, ASF work is low priority to the shipyard and it will not be accomplished on schedule if ship's force does not keep close track of its progress.

E. A Systems Petty Officer Management Program can be beneficial. Each shipboard system which requires any shipyard work or major ship's force work is assigned to a petty officer in writing. The shipyard is then provided a list that identifies all System Petty Officers. The System Petty Officer's job is to monitor progress of work, Q.A. the work, identify problems, and follow through during testing and operation of the system's equipment.

F. Cleanliness. It is shipyard and TYCOM policy that overall responsibility for cleanliness of the ship rests with the ship. This policy is sound. However, what actually happens is that the shipyard does not accept any responsibility for cleanliness whatsoever. A complete disregard for cleanliness is reflected by the average worker, and minimal precautions are not taken to prevent unnecessary accumulations of dirt, industrial debris, and spillage of flammable liquids. The current policy in practice by many shipyard workers is to take no precautions at the job site and to let ship's force clean up their mess.

G. A separate sea valve log is recommended while in dry dock.

H. It is recommended that a fire main valve log be maintained and that each valve be tagged with a metal tag to show its proper location. The same applies to strainers. This is required to ensure they are returned to proper locations.

I. Tool Control. In general, no more than one man per work center should be authorized to draw shipyard-provided tools. A weekly inventory should be required and this inventory reconciled with SFOMS Tool Control.

J. Valve control during repair. All valves removed by ship's force should be identified by a metal tag. A log should be maintained by the work center removing the valve and a log should be maintained by the valve repair shop. Valves should be returned after repair with packing, handwheel and valve label attached.

K. Weight changes in dry dock must be monitored. The log should reflect any changes greater than 1000 lbs.

L. Tag-Out Log. The shipyard uses the ship's tag-out system, and does not maintain a log of its own. The number of tags required is of large magnitude, therefore, close management attention is required. Additionally, shops are not conscientious about clearing tags, especially toward the end of the COH. Consequently, ship's force must be the agent to ensure that tags are cleared and jobs are completed.

M. It is recommended that two fire parties be formed for each duty section. One fire party should consist of the most highly trained personnel available and the second (back up) may be drawn from the Rescue and Assistance Detail. In the event of a major fire, sounding general quarters may not be as effective a course of action as anticipated in view of the ship's condition and partial crew aboard.

N. Damage to ship's equipment as a result of temporary service leads is a major problem. The shipyard does not have any means to support service leads, hoses, etc. other than by supporting them from light fixtures, piping, wire ways, etc. Considerable damage results from this practice. No formal procedures exist to resolve the damages that ensue. It invariably results in a contest between the ship and shipyard as to responsibility for effecting repairs.

O. Electrical interference is not adequately covered by job orders. Shops such as 11, 26, 56 and 38 will remove, cut and otherwise damage electrical systems while in the process of performing industrial work, and Shop 51 is not tasked to correct the problems generated. The result is a large number of electrical problems at the end of the COH.

P. The following specific functions in Engineering require enough attention to warrant designation of a specific individual/officer:

- COH Coordinator - keep track of ASF, IMA work, shipyard work status, undocking status, etc.
- SFOMS Coordinator - liaison SFOMS work.
- Testing Coordinator - all HM&E testing.
- Valve Maintenance/Repair - all ship's force valves.
- Training assistant - all Engineering training both on and off ship.

Q. No organizational structuring can succeed, if the work center supervisors and division officers do not understand what work is to be accomplished and who is tasked to accomplish it. The learning process must begin with the first COH tradeoff conference. It is, therefore, recommended that SARP tradeoff conferences be conducted onboard ship (vice shipyard), so that all responsible ship's force personnel can attend and become familiar with the SARP.

EXECUTIVE DEPARTMENT

Property Passes

When in the Controlled Industrial Area (CIA), a property pass, NAVSUP form 155 (rev 8-71), is required for: 1) personally transported items belonging to the government or which appear to be government property, and 2) cameras and related photographic equipment. The pass must be properly filled in and the authorizing signature must be on record at the shipyard police station. In addition, cameras must not be loaded with film when transported within the CIA. The camera property pass should normally be made valid for a six month period of time. All cameras or government property not accompanied by a properly filled out property pass may be confiscated. These items, if not contraband, will be returned to their owners upon presentation of valid property passes.

Training

Washington State Criminal Justice Training Commission offers a full training program for civilian and military law enforcement and corrections specialists. A yearly catalog may be obtained by writing to the state capitol in Olympia.

The Naval Correctional Center in Seattle offers a two day course in correctional procedures. Contact (b) (6) or (b) (6) at the Naval Correctional Center Training Office for information.

The Federal Bureau of Investigation offers several excellent training programs individually or through the Training Commission. Contact Special Agent (b) (6) at the F.B.I. Seattle Office for information.

Drug Enforcement Agency offers excellent specialized narcotics training for up to two weeks in length. Contact Special Agent (b) (6) at the D.E.A. office, Seattle.

Special Agent (b) (6) is an unarmed self defense specialist with the Naval Investigative Service. He will be happy to discuss your training needs.

Special Master-At-Arms afloat or Shore Patrol courses may be set up by contacting Fleet Training Center, San Diego.

Theft Problems

Thefts increased dramatically after arrival in the shipyard. With many personnel living off the ship, near empty berthing compartments became tempting targets for thieves. Missing tools were also a major problem. Almost all tools issued by the shipyard are marked "USN ID", however, only the larger or more expensive items are serialized. Accurate record keeping, mass education, and constant supervision are essential for minimizing the theft problem.

Security Inside the CIA

Identification cards are required to be worn (visibly attached to the outer garment) by all personnel within the CIA. Ship's force will wear the Armed Forces Identification Card placed inside the PSNS issued security pouch/badge. Written authorization and an escort is required to exit the CIA when the security badge has been lost/stolen. All bonafide guests, visitors, and those without a PSNS issued security badge require an escort when within the CIA.

MEDICAL DEPARTMENT

Medical Department was tasked with performing its normal functions of medical care as well as performing industrial work. This proved exceedingly difficult due to decreased departmental manning, increased patient load, and lack of sterile conditions.

Problems and Solutions

A. Adequate medical care cannot be provided in an industrial environment due to increased patient workload, loss of personnel, and loss of sterile conditions. No acceptable solution was found.

B. Audiograms were invalid due to excessive noise. As many audiograms as possible were referred to base facilities, but the practice was not entirely satisfactory.

C. Usage rate of many drugs and intervenous solutions varied drastically from the norm. Approximately \$2,500 worth of drugs and medicines reached their expiration date, and of these approximately \$1,000 in intervenous solutions could have been off loaded to NRMCMC San Diego had it been known that NRMCMC Bremerton would not accept them. These solutions are required items and possibly could have been used prior to their expiration dates. These solutions are listed below:

6505-00-116-5000	Dextrose and Sodium Chloride	22 BX	114.84
6505-00-299-8615	Ringers Lactated	22 BX	211.86
6505-00-153-8651	Sodium Chloride	68 BX	319.60
6505-00-222-1357	Sodium Chloride	14 BX	104.16
6505-00-116-1067	Dextrose in Ringers	6 BX	62.40
6505-00-116-4600	Dextrose 5%	15 BX	65.85
6505-00-116-4610	Dextrose 10%	10 BX	59.50

Additional drugs were a variety in kind from controlled narcotics to many common, everyday use drugs. None of the additional drugs were in a high useage category, but if it had been known that NRMCMC Bremerton would not have accepted the drugs on a give away basis, they too could have been off-loaded in San Diego. It is felt that if a ship can offload most of its close to expiration drugs on a give away basis or on a trade basis, it would save money in the long run.

NAVIGATION

A common problem shared by Navigation, Air and Operations was the breakage of Navigation Bridge, Flag Bridge and PRIFLY windows. Windows are sole source supply and are extremely expensive. To prevent breakage in future overhauls, the following recommendations are submitted:

Ensure windows are covered with protective material, e.g. plywood, prior to any industrial work in the island area (including installation of staging).

Do not allow use of pneumatic tools in the immediate vicinity of windows.

Closely supervise ship's force work and monitor shipyard work in the island area.

OPERATIONS DEPARTMENT

Discussion

The Operations Department was responsible for coordinating the installation and modernization of an extensive electronics package. This package is subdivided into six major areas:

- Weather and RADAR systems
- Communications and ADP systems
- NTDS and CVIC systems
- ACLS and CATCC systems
- CCTV and SINS systems
- CVTSC and Electronic Warfare systems

The Electronic Material Officer was tasked with coordination of all work that fell within the cognizance of the Operations Department. To assist him, tracking officers were assigned to specific pieces of equipment/portions of installations within each of the six areas mentioned above. Shipyard liaison was handled primarily through the office of the EMO so that installation, quality assurance (Q.A.), and testing could be centrally controlled.

Lessons Learned

A. Pre-Planning: The work centers experiencing the least amount of difficulty were the ones in which key operation and manpower requirements were identified up to 1.5 years prior to COH. Early submission of Work Deferral Requests (form 2K) is essential. Late submission usually resulted in these work requests placed in a low priority status due to lack of funding and manpower constraints.

B. Quality Assurance: The importance of quality assurance in electronics overhaul work cannot be over-emphasized. The ability to perform this vital function, however, is inevitably hindered, if not curtailed, by the rapid accumulation of completed key operations as the installation of new and refurbished electronic equipments intensifies near the end of overhaul. The attendant increase in ship system testing requirements also takes its toll of available manpower and time. The end result is that problems are often discovered weeks after the end of overhaul when equipments or systems begin to fail and investigations reveal poor workmanship in the form of wiring errors and other discrepancies which would have been routinely discovered and corrected by a vigorous Q.A. program. Thirteen of thirty-eight electronics casualty reports submitted by RANGER since departing PSNS are evaluated as having been the result of poor workmanship. Most significant of all post-overhaul discrepancies has been the findings of the Instrumental Tempest Survey conducted 1-12 May 1978. NAVELEXSYSENGCEN Vallejo Ca. 171903Z MAY 78 refers, citing numerous wiring errors and related problems associated with virtually the entire suite of secure processing equipments/systems.

C. Manpower Resource Management: TAD/school requirements must be projected throughout the overhaul period and balanced against available manpower. This particular item was mentioned by all of the work centers as one of the hardest to plan. During long periods of equipment shut-down, it is difficult for operators and technicians to stay qualified. Another factor in the equation is the loss of personnel due to normal attrition without onboard relief. Those ratings experiencing manpower shortages or skewed rate distributions seem to be detailed first to operational units; the result being sorely undermanned work centers.

D. Tool/Test Equipment Inventories: It is especially important to inventory and serialize all tools and test equipment prior to entering the yards. Because much of the normal PMS is not conducted during COH, certain specialized pieces of test equipment have a tendency to become lost.

E. Test Plan Of The Day (TPOD) Meetings: It is considered vitally important that the concept of TPOD meetings be continued and that the importance of these meetings be stressed. The positive benefits deriving from a free exchange of ideas and information in an informal atmosphere were recognized as being an important factor in facilitating accomplishment of electronics overhaul work.

3-M DEPARTMENT

Background

The responsibility for ordering PMS coverage lies with ship's force, who essentially is the last to know what equipment will be received onboard during a complex overhaul. Nameplate information and APL numbers are required for ordering PMS. In addition, a work center must be assigned prior to knowing the extent and complexity of the PM.

NAVSEACENPAC policy requires that all new equipment be landed and connected prior to requesting PMS coverage. The 3-M Coordinator is tasked with overseeing the ordering of PMS material. He is, however, removed from the acquisition and tracking picture, and he therefore needs an effective management tool in determining who is receiving equipment, when it is to arrive, and what that equipment consists of. The processing and tracking of Feedback Reports, once received, are routine in nature.

Planning

RANGER's goal was to have all PMS coverage on all new equipment in hand prior to lighting off the equipment in order to: a) insure the equipment was operable; b) become familiar through OJT utilizing the PMS; and c) organizing a logical PMS work schedule prior to the equipment being accepted.

The Operations Department requested PMS coverage by component for the systems which were to be landed while the Engineer's relied heavily on the FILS Manual as a check-off list for ordering their coverage. PSNS Code 241.88 agreed to supply the 3-M office with a copy of all ship's lists of configuration changes (SLCC's). A duplicate was made and forwarded to the applicable department for their information and use.

Accomplishment

Status reports were submitted at the quarterly COH Review Conference. A listing of outstanding (66) Feedbacks was provided to NAVSEA. After research and assistance in expediting, NAVSEA provided a response as to status of these equipments. RANGER still has 51 remaining equipments MRS with the promise that all equipments will have PMS coverage by October 1978, six months after leaving the shipyard. This represents one-sixth of the new equipment requiring PMS coverage.

Recommendation

That tracking officers receive inputs from all sources of new equipment scheduled to be installed as a result of the overhaul, and that they provide the 3-M Coordinator with their inputs.

Continue as did RANGER, to make NAVSEA/PERA aware of PMS status and to start as early as possible to request PMS coverage. In this fashion, if PMS has not been created or requirements for PMS are not recognized, the mechanism to contract PMS coverage will not have to wait until the ship has left the shipyard.

SAFETY DEPARTMENT

Background

Preparations for the overhaul began several months prior to departing San Diego. All Safety Department personnel received firefighting, defensive driver and basic damage control training. After arriving in Bremerton the Safety Officer attended the shipyard's Quality Assurance Training Course. Additionally, the Safety Officer and one first class petty officer, plus several petty officers from other departments, were qualified as defensive driving instructors for RANGER. Training was conducted at Olympic Junior College and also at NAS Whidbey Island. Enroute to Bremerton, representatives from the Washington State Highway Patrol and the Bremerton Police conducted training lectures for all hands.

Problems and Solutions

A. Violations of fire zone boundaries. Require all service leads penetrating fire zone boundaries to be equipped with quick disconnects within five feet of the fire zone boundary. Tolerate no exceptions.

B. Serious problems existed relative to the rip-out of asbestos. Personnel were not adequately prepared for a tasking of this magnitude. Adequate information relative to the hazards associated with asbestos was not initially available. Also getting personnel to comply with the safety requirements was extremely difficult. The solution was to allow only fully trained, properly equipped personnel to remove/install asbestos, and to tolerate no exceptions.

C. Voids were opened, gas freed, and occasionally not reinspected after being closed. RANGER established a positive inspection program to insure that the gas free engineering program was properly adhered to.

D. Painting with inadequate ventilation and/or improper equipment was a serious problem. RANGER trained several paint teams, procured proper equipment and prohibited anyone from painting in enclosed spaces unless all safety requirements were fulfilled.

E. Daily inspections must be conducted by safety personnel in order to minimize safety violations. Items to be especially aware of are: a) excessive trash, exposed hot wires, missing safety chains and nets, and hot work being done without a fire watch present.

SUPPLY DEPARTMENT

General

A. One problem encountered shortly after arrival in the shipyard was experienced by those personnel who had transported large amounts of household goods on the ship for resettlement in Bremerton. The difficulty arose when returning to the ship after a specified grace period because the personnel did not have valid parking permits for their cars. They eventually succeeded in removing their household goods after multiple trips or longer waits than had been anticipated.

B. Plan to order the rehabilitation materials that are not readily available at PSNS as early as possible and place them in a secured storage area to avoid last minute problems of procurement. Recommend that any needed expanded metal and slotted angle irons be ordered early since a long lead-time is generally the rule. When ordering materials, make sure all "bits and pieces" are included, such as lighting junction boxes, welding rods, steel rod, and flat bar for brackets.

C. Be prepared to have compartments visited frequently by yardworkers and ship's force rehab personnel. On occasion you may have to provide a watch at a moments notice for long periods of time. It is a good idea to assemble current phone numbers of SFOMS, Habitability, etc. and pass them down to all duty section leaders. Phone numbers change constantly during overhaul so it is a good idea to be alert to these changes.

Stores

A. Maintain a ready issue stock of tile, tile adhesive, fire retardant paper, rags, plastic bags, and masking tape for all departments. This will considerably reduce the number of requisitions to be processed. Restrict the issue of highly pilferable items at Servmart or require the preparation of shopping lists and then verify them against the adding machine tapes.

B. Be ready to write many S and A 48's and to use the Imprest Fund. Many small items of non-standard material will be needed as people rehab offices and work spaces.

C. A truck for the receiving team is a must. A flat bed is best, but a pick-up will do. They can be "rented" from NSA Sandpoint in Seattle.

D. SUADPS is designed for six digit locations, but suggest the use of only the first five. This allows material to be stored by using the 1348-1 supplementary address field. SOAP is a perfect time for the conversion.

E. Maintain a stable work force at SOAP. Pre-offload of storerooms to the hangar bay allowed rapid material movement to the SOAP site. One team worked the hangar bay and three teams worked bringing storerooms to the staging areas. If at all possible, complete the first inventory prior to PROCOS/CONCOS application. FAGPAC assistance is very helpful for this evolution. Run several excess routines to purge your stock. SOCAL deletes will continue to add to the problem of excess material.

Food Service

A. Two months before entering COH inform the Commanding Officer, Executive Officer and Supply Officer that coffee issue will cease the day Commuted Rations begin, due to entitlement, cost, etc. Post a sign to inform all coffee issue PO's and POD notes.

B. Two other recommendations are to offload combat meals before arrival. Should the Marine Detachment require "C-rats" during COH, they are readily available through NSC Bremerton. Also, if individual juices are stocked, consider phasing them out completely; individual milk and orange drink are readily available if it becomes mandatory to prepare box lunches. The high cost, high loss rate due to pilferage, need to account for multiple items and storage space required does not warrant stocking during COH.

C. The offload of freeze and chill items may be required sooner than you desire. Ensure milk, dairy products, and bread are not overstocked because these items are very slow to handle. Have subsistence items ready to offload shortly after arrival. High reefer temperatures will be frequent due to chilled water/salt water lines being switched, fire main being secured, etc. Any other loose items should be bagged, boxed and tagged well in advance to expedite offload.

D. Be ruthless in deciding what subsistence items should be deleted. You can always add later if you so desire. Consider using items you don't normally carry (i.e. cake mixes, cookie mixes, etc.). Further check with NSC Bremerton to determine those items they don't stock which you are currently using. Ensure the current lead time requirements for subsistence orders and the new requirements for Bremerton are coordinated closely.

E. A COMNAVIAIRPAC directive requires all Engineering messmen to be reassigned to the parent department at the beginning of COH. Identify the men/billets early to reassign others to fill the gap and ensure an equitable transition-liberty rotation for men involved. Messmen assigned to the CPO mess remain a part of S2M as CPO's will subsist in the enlisted dining facility. Coordination between S2 Division and the CPO mess caterer will be required.

F. Consider utilizing the innovative RANGER "Drydock Deli" for providing bag lunches aboard ship while the Enlisted Dining Facility is on the supporting APL. Each day offerings of roast beef, turkey, ham and cheese and tuna sandwiches "made to order" are available to "all hands" on a "Cash and Carry" basis. Choices of bread plus potato chips, a salad and a beverage top off the special meal.

G. The shift from the ship's galley to the APL without missing a meal, while at the same time allowing for the intense cleaning afterwards, required a loss of liberty by the entire Food Service Division. Make every effort to assign top supervisory personnel to begin making the APL ready for use upon arrival. The move must be expeditious. Strongly suggest moving aboard at least one day before commencement of COMRATS to get the "feel" of the operation and to "walk" through collection of cash, use of meal passes, etc. This will help determine if any changes to your procedures will be required.

H. Since the time for the noon meal will be rather short, and large noon meals in a shipyard environment are not ideal, it is suggested that the ultimate type of menu selections for the noon meal be of an express line / light lunch type. Salad bar, dessert selections, and beverages offered will also require examination. Revise existing selections to provide simpler, more time saving, inexpensive offerings that are more suitable for COH-type atmosphere.

I. The security of spaces onboard at night as well as the security of portable reefers on the pier (and their temperatures) requires close attention. Suggest two very mature non-petty officers be assigned to night duties, working '5 and 2' (1730 to 0530) to check spaces, record temperatures, and provide stability to these responsibilities.

Sales

A. Break-ins occurred in storerooms which were located in out of the way places. These break-ins were by ship's force and/or shipyard personnel who wanted to steal something or by shipyard personnel that wanted access to do industrial work. Recommend a roving patrol be established and/or burglar alarms be installed if at all possible.

B. Charges for laundry services provided by the Navy Exchange ran between \$4,000.00 and \$5,000.00 per month. These were paid out of ship's stores profits. Public vouchers used for paying the charges are not processed by NRFC, Treasure Island in a timely fashion, therefore, the charges won't be paid in the same accounting period in which they occurred. Recommend holding back enough profit to cover the expense when it is finally paid by NRFC.

C. Ship's store merchandise can be procured through PSNS, Bremerton using contract bulletin, SSAC, and emergency procedures. Emergency procedures may be used due to the non-availability of a contracting officer at Bremerton. Merchandise ordered on SSAC and contracts are subject to transportation charges depending on the vendor (about 95% of all merchandise was subjected to transportation charges). All vendor warehouses are located in San Francisco, except those for cigarettes, which are warehoused in Seattle. Delivery of merchandise takes from 14 to 21 days after the vendor receives the purchase order.

Disbursing

A. Both RANGER and KITTY HAWK experienced attempted robberies during COH and the presence of yard workers complicates the problem. A good alarm system, preferably connected to the MAA Office, and limited access to the Disbursing Office are important considerations. There were no problems in the use of Marines as payroll guards, and there was no need for an armored car, although one is available. Rainier Bank, the local Federal depository, gives excellent service.

B. Travel business will increase considerably, requiring more than one person in the office at least part time. Close coordination with Educational Services Office, including providing a Disbursing Clerk to ESO to assist in filling out travel claims each Monday may also be required.

C. Make sure COMRATS and sea pay changes are entered in a timely fashion. Many problems were encountered in these areas because frequently these charges are not picked up and will have to be resubmitted.

Wardroom

A. Even though most officers lived on the beach, RANGER was declared "Habitable", so a stateroom was provided each officer. There were very few open heads, so no distinction was made between officers' and enlisted heads.

B. There was no mess bill during the overhaul. Pay-as-you-go was utilized. S-5 Division served meals on RANGER during the entire yard period. However, with all the rehab work that was required, personnel forces were spread very thin.

C. Many spaces under S-5 Division cognizance will require paneling and carpeting. These spaces are usually not in areas of high traffic density. It is advantageous to decide early just what needs to be done, order the required material, and get the job done ASAP. Protective coverings can be placed over those areas exposed to traffic.

Aviation Stores

A. For RANGER's COH, SOAP-A was conducted at Fleet Aviation Support Team (FAST), NAS North Island. Also, the many required evolutions (i.e. SOAP-A conference, AVCAL/SAVAST, material offload, SOAP-A milestones, etc.) were completed prior to departure from San Diego.

B. Shipping and receiving was maintained throughout COH. Utilize stock series document numbers for AVCAL (With CNAP approval) and ensure S-1 personnel are familiar with AVCAL document series (S-1 performs SOAP at PSNS). During the AVCAL conference, ensure that the CLAMP wholesale storage sites (WSS) are directed by ASO and CNAP to ship all CLAMP assets to FAST, San Diego, instead of to the ship. Non-compliance with the proper procedures for the movement of AVCAL and CLAMP material results in wasted manhours and money in "redirecting" material to San Diego.

C. The FAST/SOAP-A team will require that you forward all MDS drawers of the SVMDS cabinets to San Diego for mock-up and stowage of AVCAL receipts. Recommend early in the COH, that each cabinet be properly stenciled (once storerooms are identified, number of cabinets decided upon, and location system determined): Stencil each cabinet and drawer so that upon backload you get the right drawers for the right cabinet. When bringing cabinet housings aboard, submit your ASF job orders at least 10 working days prior to date of assist.

D. Since carriers undergoing COH have no stocks onboard, it is highly

recommended that S-6 initiate a "MEMO FOR THE RECORD", signed by CNAP Code 435, authorizing "exemption from reporting". This action will preclude the volumes of negative reports as a result of daily ASO/CNAP/ICP Stock Screens/Inquiries.

E. MSP is set up for 6 digit location field. Since it is highly desirable to have only 5 digit location fields for receiving purposes, it is recommended that the sixth digit be established as an ignored constant.

Automated Data Processing

A. When RANGER lost chill water during COH, S-7 Division lost use of its air conditioning unit. An auxiliary salt water A/C unit was subsequently installed. This A/C unit was not as effective as the chill water unit during the hotter months in Bremerton. At times, it was necessary to isolate the computer room from the keypunch room to maintain computer operations. Because of this, it became too warm in the keypunch room for the keypunches to function properly, so keypunching time was borrowed from PSNS Supply center. However, when RANGER's computer broke down, a substitute computer was not available. There is no permanent U-1500 system in the Puget Sound area. Competent DS's who were capable of trouble-shooting and repairing a malfunctioning system were the only solution to RANGER's computer problems.

B. The jobs run on the computer shifted as a result of the change in the ship's status. AV3M and aviation SUADPS diminished significantly, whereas stores SUADPS increased due to SOAP requirements. Also, requests to do jobs that hadn't been done before overhaul increased. These jobs were processed as time allowed and it was explained to them that once out of overhaul, S-7 Division probably would not be able to do these jobs because of other commitments.

TRAINING DEPARTMENT

Background

Minimal industrial work was performed by Training Department during the overhaul. Attention was focused on shipwide training requirements.

Problems and Solutions

A. AIMD (Avionics Division) suffered a severe shortage of personnel for operating and maintaining newly acquired test benches within the VAST and MINI-SACE work centers due to the delay in SMD approval. Carriers should have an approved SMD prior to an overhaul period to allow time (6-12 months) for personnel to be ordered in and trained.

B. Some personnel had been sent to various "A" schools by their parent divisions which later resulted in their transfer to another division and/or department upon their return to RANGER. This caused overmanning of designated strikers or E-4's in some areas of the ship. All "A" school requests now must be approved by both the parent department and the prospective department.

C. There was much difficulty in identifying and obtaining quotas for firefighting and repair party training. Courses are available from NTTC Treasure Island and FTC San Diego. From June to December 1977, RANGER sent up to 30 personnel at a time, 4 times a month, to NTTC Treasure Island. The lack of a nearby source for this type of training resulted in a 9 day loss of manpower for each 4 day school. A solution to this problem would be to provide more timely transportation support for ships in overhaul or incorporate a course of instruction at NAS Whidbey Island. The savings in man-hours lost would perhaps offset the additional costs.

D. PQS is an excellent means for familiarization of personnel with engineering watch stations and duties, however, supplemental training and watchstanding are required for full qualification. Until the plant is substantially complete, hands-on theory and systems training capability is virtually non-existent. By the time opportunities become available for meaningful training with the equipment, LOE preparations take priority. In order to provide actual hands-on training during the overhaul period, it is suggested that as many engineering watchstanders as possible be sent TAD to operating carriers.

E. Maintaining PQS records in large divisions, such as those in Engineering, becomes an administrative nightmare, because the many "short term" training petty officers are often assigned additional duties. Recommend assigning training petty officers for a minimum 12 month assignment on full time duty basis. This will provide stability and enhance the quality of training and record keeping as the training petty officers become more experienced in their roles. A good training petty officer can play an important part in maintaining high morale during a difficult yard period.

F. There are numerous PQS systems applicable to HT ratings resulting in frequent duplication. Suggest using Repair Party Leader PQS as an HT in-rate PQS.

G. A problem common to most, if not all, ships is the lack of a classroom for divisional training during overhaul. Normally, there are excessive noise levels prohibiting lectures, etc. on the ship. Towards the midpoint of RANGER's COH, the SUPSHIP trailer was moved off the ship and it became available for divisional training. In addition, space was available for training on base upon request.

H. Lack of professional "hands-on" experience in the Communications Center could result in a downgraded capability. TAD assignment of selected Radioman to the Naval Telecommunications Center, Bremerton, assisted in maintaining a higher than normal level of expertise in the Communications Department.

I. RANGER experienced a serious lack of available "C" school quotas. Although the policy of limiting some class "C" school quotas to periods during PCS moves is sound and in the best interest of operating forces, a qualified exception would seem to be in order during an extended overhaul period. This is an excellent opportunity to take advantage of formal training courses not otherwise available.

J. The extensive use of air hoses, temporary fire hoses and fire mains, electrical lines, etc. precludes viable and realistic repair party training during most of the overhaul period. Consequently, RANGER experienced a definite lack of training in this area. It is strongly recommended that a positive effort be directed toward structuring the repair party organization so as to conform to the shipyard environment with all billets identified and all repair officers identified by name. Standard operating procedures should be established and all lockers should be inventoried for completeness and material condition of all equipment. Four months prior to the end of overhaul, the repair party organization and the standard procedures required for their return to an operational environment will need to be reviewed and emphasized. Continued attention should be directed toward resolving damage control discrepancies.

WEAPONS DEPARTMENT

Background

A Weapons Department SFOMS representative, who would be available throughout the yard period, was designated 6 months prior to commencing the overhaul. Shortly thereafter, a SFOMS representative from each division was assigned and the departmental organization was completed. Representatives and divisional supervisors attended all SFOMS meetings. The formation of a Weapons Department SFOMS organization in the very early stages of pre-overhaul planning is considered vital to the success of the overhaul. In conjunction with the basic departmental SFOMS organization, a separate but integrated Weapons Department SFOMS Supply Team was formed. Job-scoping and supply requirements were requested after the representatives had attended the PERA (CV) training sessions.

Problems and Recommendations

A. Weapons Department's biggest problem was the complete lack of experience in matters pertaining to all facets of a complex overhaul. Although PERA (CV) provided training prior to the overhaul, their input was minimal. The then current operational commitments took precedence over items related to the overhaul. Only constant attention and continual dissemination of pertinent information helped alleviate some of the disinterest felt by all hands prior to the overhaul. After arriving at PSNS, the lack of experience became further evident.

B. School and TAD requirements took a large cut out of the Weapons manning level. It was extremely difficult to project start and completion dates for various key operations six months in advance, when TAD requirements are not known until as little as a week or two in advance.

C. Shipyard personnel are required to work on systems, such as the magazine sprinkler system, without prior experience in the systems' use or design. Selected yardworkers should be required to attend FTC schools in San Diego to gain this necessary knowledge.

D. When the shipyard removes the flight deck elevator hatches, covers should be required to be placed over the openings to prevent rain from entering.

E. Remove all light globes in elevators and magazines prior to arrival at PSNS.

F. If sandblasting of the weapons elevators is required, it is less expensive to purchase a sandblaster than rent one. Sandblasters can be purchased at R. A. Barnes in Seattle.

G. It is important that personnel be sent to the required schools as early as possible, so that they will be trained and available at the end of the overhaul when they are needed.

H. Institute and understand the department's PMDO package as soon as possible. The department can then be relieved of PMS responsibilities for that equipment temporarily under shipyard control.

I. As early as possible acquire personnel onboard who have been trained to operate and maintain the new equipment to be installed. Having these personnel onboard during the initial phases of the SHIPALT installation will help eliminate the technical problems which occur when new systems are being groomed and certified.

ENCLOSURE (1)

HABITABILITY OF RANGER DURING OVERHAUL

HABITABILITY OF RANGER DURING OVERHAUL

GENERAL

The habitability or living conditions onboard an aircraft carrier in overhaul, quite naturally have a significant effect on the morale and productivity of the crew. The problems of working and living aboard RANGER or any ship undergoing overhaul can be categorized in general problem areas as listed below.

SANITARY FACILITIES

The major limiting factor in the number of heads that can remain open during overhaul is the number of ship's drains that can be connected to shore facilities built into the drydock. RANGER and the other carriers of the FORRESTAL class are more fortunate in this area than the newer ships because most of the heads are connected by common drain manifolds. Because of this, RANGER has been able to maintain 35 of her 85 heads in service to this point in the overhaul; a number much higher than was possible on the two newer ships that preceded her.

Another problem created by the limited head facilities is the lack of hot water. This is due to the fact that the water heaters aboard the ship are in specific zones and operate off of steam supplied by the shipyard. Overloading the few heads in service overloads the water heaters in those areas and it is very common for all of the hot water to be used up ten to fifteen minutes after reveille or the end of normal working hours at 1700.

RANGER's heads are supplemented by portable sanitary buildings in Hangar Bay Two. Eight units were initially brought onboard and as the number of open heads increased when flushing water and drains were connected, these units were gradually removed. Three units are still in service and receive very heavy use.

VENTILATION/AIR CONDITIONING

Ventilation of the ship is a major problem caused by several factors; vent systems are torn out for SHIPALT/Repairs, vent motors are out of service due to work on equipment on the same circuits, a large percentage of fresh air (outside air) systems are down due to interference with SHIP-ALTs, the dust and smoke levels are high due to the industrial work within the ship and most importantly, the entire chilled water system is out of commission while the refrigeration units are being overhauled. The only areas of the ship with air conditioning at the present time are the Forward Internal Communications Room for the telephone switchboards and the Computer Room. These areas are utilizing portable air conditioning units until the ship's system is restored.

RANGER's ventilation system is comprised of approximately 80% recirculation systems and 20% fresh air supply systems in terms of cubic feet of air moved. On an aircraft carrier the majority of the fresh air is taken in near the water line to protect the systems from aircraft exhaust and this has been a significant problem for RANGER. The N.A.T.O. Sea

Sparrow Missile System and CV-TSC installations plus modifications of the Engineering vent systems necessitated the ripout of a large number of the fresh air systems near the main deck that supply the fresh air. Although there are large areas of the ship with virtually no forced fresh air supply, an estimated 5 to 10 percent of the air moved onboard is outside air. The large number of open access holes alleviate this problem to some extent for the decks below the hangar deck. The internal heat levels quite obviously are, therefore, directly related to the weather outside; a real benefit of being overhauled in Washington. Dust, paint fumes and smoke due to welding/cutting are controlled as much as possible with the use of temporary exhaust systems in the immediate areas of work of this nature.

The chilled water system will gradually become operational in the fall and will be put into service on a prioritized basis with the highest priority going to the systems that supply the electronic spaces. This is necessary to support the ship's electronic testing and check-out portion of the overhaul. The absence of RANGER's Air Wing does allow some relief to the environmental problems because enough berthing compartments and state-rooms are not being utilized, so that the ship's force is able to remain clear of the areas with the high heat, noise or smoke/dust problems to some extent by moving frequently.

Noise created by shipyard industrial work at night is a very real problem to the crew living aboard the ship and to the maximum extent possible, the shipyard scheduled its work to minimize this problem.

MESSING FACILITIES

RANGER lost the use of her aft mess decks immediately after overhaul started due to the installation of the Improved Weapons Handling System elevator in that area and the rip-out of the smaller weapons elevator nearby. At the time, the mess deck on RANGER's Auxiliary Personnel Lighter (APL) was put into service and the option of receiving commuted rations (monetary allowance vice free food) was offered to the enlisted crew. When the APL mess decks became fully operational, RANGER's forward mess deck operation was switched to a quick food, take out service offering a variety of sandwiches, salad, fruits, chips and drink for \$1.05. The sandwiches are heated in micro-wave ovens upon request and this operation, referred to as the "Drydock Deli" has been very popular with the crew.

1,810 members, or 78% of the crew are now receiving COMRATs and have the option of eating at the Drydock Deli, the APL mess deck, ashore, or "brown bagging", according to their desires. The APL mess deck caters to all personnel not on COMRATs plus anyone desiring a normal meal for \$1.05. It currently is serving an average of 800 meals daily and the Drydock Deli serves an average of 700 meals daily.

The limited messing facilities are complimented by a large assortment of vending machines and mobile canteen trucks on the pier; both operated by the Navy Exchange on base. In addition, an open gangway policy is in

Enclosure (1)

efforts for brown bagging while in overhaul; a policy not totally feasible on an operational Navy ship due to the sanitation problems created.

LAUNDRY/ DRY CLEANING FACILITIES

RANGER's overhaul includes complete replacement or refurbishment of both its laundry and dry cleaning plants. Both facilities were placed out of commission after overhaul began and laundry services were contracted from shore facilities on base. Initially this service was a significant problem due to unreliable and poor service by the shore facility, but the majority of these problems have been resolved at this time. Vending trucks pick up and deliver the laundry on the pier daily with a three day turnaround time. Tanager service is available to E-7 and above only. Dry cleaning is available through the Navy Exchange or commercial sources. Problems were encountered by the shipyard in obtaining contracts to overhaul/replace RANGER's laundry plant but these have been resolved and the ship's laundry plant should be operational prior to departure from Bremerton.

BERTHING

As mentioned above, RANGER enjoys some flexibility in assigning berthing spaces to compensate for environmental problems (noise, heat and air pollutants) and to allow for berthing refurbishment due to the absence of the Air Wing (roughly one half of the full combat personnel complement). This flexibility, however, has been of marginal value to the crew and a large percentage of the bachelor personnel (unmarried or married but unaccompanied) have chosen to reside off the ship. For officers, BAQ facilities are not available except for the most senior officers due to lack of facilities. The majority of junior officers reside ashore without the benefit of BAQ. The chief petty officers' situation is similar to the officers. At the E-6 and below levels, the base has been able to provide room for 272 residents in the BAQ. In addition, space is available for 439 personnel on the APL which, under the present circumstances, is far superior to berthing facilities aboard the ship. Three chief petty officers also reside aboard the APL in what were once officer's staterooms. The entire Marine Detachment (41 men) resides ashore in the station Marine barracks. The remainder of the enlisted crew either lives aboard the ship or have gone together in groups and rented houses or apartments ashore without benefit of BAQ.

For the accompanied married personnel of all ranks, off ship rentals, homes and government housing is more than ample in the immediate community. The few problems that were encountered in obtaining off base housing by the ship's crew were a result of a five week overlap with the previous carrier when RANGER arrived in Bremerton.

PERSONAL SERVICES

Personal services include barber facilities, ship's stores, medical and dental services, religious services, legal assistance, disbursing, and tailor service. RANGER's overhaul has necessitated the consolidation of

Enclosure (1)

some of the ship's stores and barber facilities to allow for space refurbishment, but in all areas the impact of the overhaul on personal services has been very minimal. Shore facilities at the Puget Sound Naval Shipyard have been more than adequate in replacing the lost or restricted services aboard ship and the Navy Exchange and Commissary have even changed their operating hours on Tuesdays and Thursdays to provide services to the ship's force at night. Medical/dental and religious services not available or restricted aboard ship are readily available on base and have been excellent overall.

Enclosure (1)

NARRATIVE OF EVENTS

The USS RANGER (CV 61) raced into the year 1977 frantically preparing for the up-coming 13-month complex overhaul scheduled to begin in February. The carrier was moored to the "OP" piers on North Island Naval Air Station at San Diego, California.

Having met a heavy operating schedule since her last overhaul over five years before, RANGER was more than ready for a "face-life". On 8 February the mooring lines were hauled in and the brow lifted as RANGER began her voyage to the Puget Sound Naval Shipyard Facilities at Bremerton, Washington. NORTHWEST TREK, as the voyage was fondly called, gave RANGER the look of a large hotel, pet shop, and parking lot, as dependents, pets, and automobiles were transported along with the crew to the new homeport that would bring her material readiness back up to the standards that earned her the nickname "Top Gun of the Pacific Fleet".

RANGER and her guests arrived in Bremerton, Washington via the many intricate and narrow channels lining the Puget Sound area on 12 February. The ship entered Drydock No. 6 at PSNS shortly thereafter and began the grueling 13-month overhaul.

RANGER celebrated her 20th birthday in a similar setting to the one she began in; a shipyard drydock. On August 10 the celebration included a cake-cutting ceremony and a special addition of the ship's newspaper DOCKSIDE. Later that Month on August 20 RANGER's drydock work was completed and she was moved to Pier number 3.

November was exam month for RANGER as light off examinations were held for No. 1 Main Machinery Room on the 1st and No. 4 on the 30th.

The year ended leaving RANGER alongside Pier No. 3 having completed 46 weeks of overhaul with only 12 to go.

CHRONOLOGY OF SIGNIFICANT EVENTS

JANUARY

02 SFOMS ORGANIZATION MANUAL printed.

FEBRUARY

08 Begin "Northwest Trek" (Trip from San Diego to Bremerton, Washington).

12 First scheduled day of Overhaul.

25 RANGER enters Drydock No. 6 at Puget Sound Naval Shipyard (PSNS).

AUGUST

10 RANGER Commemorates 20th year since Commissioning in 1957.

20 RANGER leaves Drydock No. 6 and moves to Pier No. 3.

NOVEMBER

01 Light Off Examination (LOE) for No. 1 Main Machinery Rooms.

30 LOE for No. 4 Main Machinery Room.

DECEMBER

31 RANGER completes 46th week of Overhaul. Only 12 weeks until COH completion.

OPERATIONS DEPARTMENT HISTORICAL REPORT 1977

January was spent in preparation for the forthcoming transit to Bremerton, Washington (Puget Sound Naval Shipyard) for RANGER's Complex Overhaul (COH-77). The ship's Intelligence Center (OZ Division) was tasked with coordinating the transit, appropriately named NORTHWEST TREK. This vast undertaking consisted of arranging berthing and messing for 561 dependents, and the on-load of 954 vehicles. RANGER departed Naval Air Station North Island on 8 February 1977 for the six day transit, arriving on the afternoon of 13 February 1977.

Immediately upon arrival, the task of off-loading the vehicles and passing dependents off station into the community of Bremerton for house hunting became the order of the day. 432 requests for housing in the area, which had also been coordinated by OZ Division personnel prior to arrival, were processed with the effort continuing until all Rangermen and dependents were settled, including the 92 pets that made the transit.

RANGER was placed directly into drydock upon arrival and the pumping operations which would settle RANGER onto the blocks began. She was to remain there for the next seven months.

During COH-77, numerous SHIPALTS were installed to greatly enhance RANGER's combat effectiveness. SHIPALT 3921 provided installation of the Carrier Tactical Support Center (CV-TSC). The TSC serves as the ASW module of CIC and complied with the S-3A and SH3-H aircraft gives the ship a significant ASW capability.

SHIPALT 4881 involved the installation of the AN/SPS-48C 3D Air Search Radar. The AN/SPS-48C provides an automatic detection and tracking capability which enhances the interface with the NTDS Model 4.0 program also introduced during COH-77.

Installation of SHIPALT 4504 provided a Keyset Control Multiplexer and a Combat Systems Switchboard which, combined with the Data Systems Refresh Memory Unit SHIPALT 4662, permits NTDS to interface with a number of systems throughout the ship. An Extended Core Memory Unit (ECMU) installed under SHIPALT 4616 provided additional core memory to facilitate a larger more complex operational program.

Simultaneous operation of two LINK-4 systems was provided by SHIPALT 5253 which converted the AN/SSW-1A to an AN/SSW-1E.

SHIPALT 4875 installed CATCC/DAIR which provides an improved operational system in the Carrier Air Traffic Control Center. This new system allows Direct Altitude and Identity Readout (DAIR) of each target on a larger Planned Position Indicator (PPI) display (22 inch vs the 12 inch typical in present PPI scopes). CATCC/DAIR will also provide an interphone system featuring "hot microphone" capability (no push to talk) and a radio system with simultaneous multi-channel receive capability. This system is similar to the equipment used by the FAA and Navy shore based facilities. CATCC/DAIR is independent of but has an interface with NTDS to facilitate transfer of needed data.

OPERATIONS DEPARTMENT HISTORICAL REPORT 1977

In conjunction with the installation of CV-TSC, which necessitated relocation of the ship's television station, SHIPALT 4723 installed the Entertainment and Training TV (CKT-14 TV) in RANGER. Circuit 14 TV provides RANGER with an excellent source of crew entertainment plus the facilities to locally produce training lectures on video tape.

RANGER's wideband secure voice capabilities were more than doubled under SHIPALT 4803 which updated the TSEC/KY-8 complement. SHIPALT 4871 greatly enhanced the message processing capabilities of the ship by the installation of the NAVMACS A PLUS System. NAVMACS A PLUS provides the capacity for address screening, printout of the fleet broadcast, limited message storage, message retrieval, and logging and servicing.

Replacement of the AN/WSC-5 with a stacked AN/WSC-3 under SHIPALT 5053, provided a multi-channel fleet satellite communications terminal backed by fleet logistic support.

SHIPALT 5056 provided RANGER a means of utilizing her new AN/WSC-3 satellite terminal by installing the Fleet Satellite Communications Secure Voice System. This system provides the capability for synchronous encrypted voice transmission.

Numerous other equipments were either repaired by the shipyard or returned to the manufacturer for complete overhaul during COH-77.

As 1977 drew to a close RANGER was well into one of the final phases of COH-77 Combat Systems Interface Testing (CSIT).

COH-77 provided RANGER with the largest, most complex electronics suite ever to be installed on an aircraft carrier.

AIMD

AIMD accomplishments during 1977 are as follows:

AIMD was awarded the COMNAVAIRPAC Aircraft Intermediate Maintenance "E" for the 18 month period ending 30 June 1977.

AIMD spaces were in the process of complete renovation. (85% complete as of 31 December 1977)

All Ground Support Equipment (Yellow Gear) was being completely overhauled by AIMD personnel at NAS North Island. (90% complete as of 31 December 1977)

A number of SHIPALTS were nearing completion including VAST (Versatile Avionics Systems Test) and other S-3 aircraft support systems as of 31 December 1977.

SFOMS ORGANIZATION

Eight months prior to the commencement of the overhaul the initial cadre of the SFOMS Staff was identified (Figures 3 and 4). Upon arrival at Puget Sound Naval Shipyard, all the officers and the majority of the enlisted personnel were identified and functioning in their assigned billets. Initially, RANGER used the basic SFOMS Organization promulgated by PERA (CV) with minor variations (Figure 5) and through attrition and expediency arrived at the final organizational structure (Figure 6). This organizational format is under review by PERA (CV) and may be adopted for future ships undergoing a complex overhaul.

It is recommended that the Training / FILS Coordinator / 3-M Coordinator work for the Shipyard Coordinator vice the SFOMS Coordinator, as most of his duties and responsibilities are related to those of the Shipyard Coordinator.

Quality Assurance, as established in RANGER, was a separate department administratively supported by the SFOMS Department but reporting directly to the Executive Officer.

Firewatch Division, as promulgated by PERA (CV) was organized as a division responsible to the Shipyard Coordinator. RANGER, however, made Firewatch a separate function directed by a function head (LCDR) as well as a division officer (LT) and an assistant division officer (LTJG).

The SFOMS Administrative Office was the central point of contact for communication between shipyard personnel and ship's force. A SFOMS duty officer was available on a 24 hour basis to assist in coordinating the industrial effort and in resolving problems.

USS RANGER CV-61

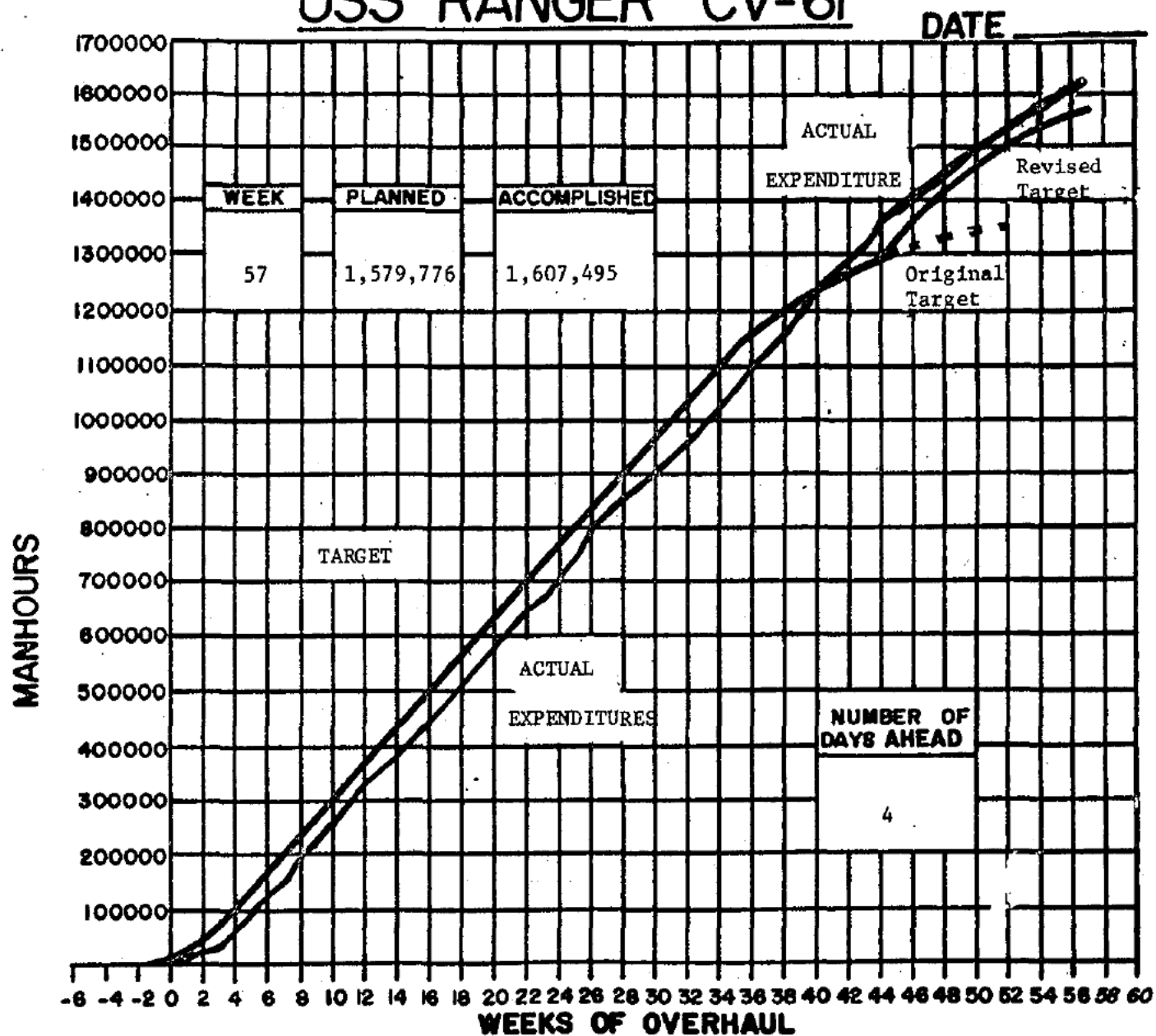


Figure (1)

MANNING
 OFFICER
 CPO
 ENLISTED

	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
WESTPAC					SO	CAL OPS						BREMER	TON	

NUCLEUS OF SFOMS STAFF IDENTIFIED

DEPART WESTPAC
 PERA CV PHASE I (IDENTIFY WORK)

7 SEP RETURN CONUS

PERA CV (SCHEDULE WORK)
 PHASE II
 18 OCT SFOMS DEPT ACTIVATED

ROUGH ORGANIZATION MANUAL

21 DEC SFOMS FULL OFFICER COMPLIMENT

SFOMS ORGANIZATION MANUAL PRINTED

8 FEB SAIL
 12 FEB COH START
 25 FEB RANGER ON BLOCKS

PERA CV
 PHASE III (GROOM PACKAGE)

1 APR KETTY HAWK DEPARTS

Figure (3)

[illegible]

20 AUG - Undocking

1 NOV - LOE #1 MMR

30 NOV - LOE #4 MMR

10 JAN - LOE #2 MMR

2 FEB - LOE #3 MMR
23 FEB - FAST CRUISE
24 FEB - DOCK TRIALS

3 MAR - SEA TRIALS

21 MAR - COH COMPLETE
24 MAR - SFOMS DISBANDS

16 GRADUAL

7

DIS ESTABLISHMENT

372

PERSONNEL

Figure (4)

USS RANGER CV-61

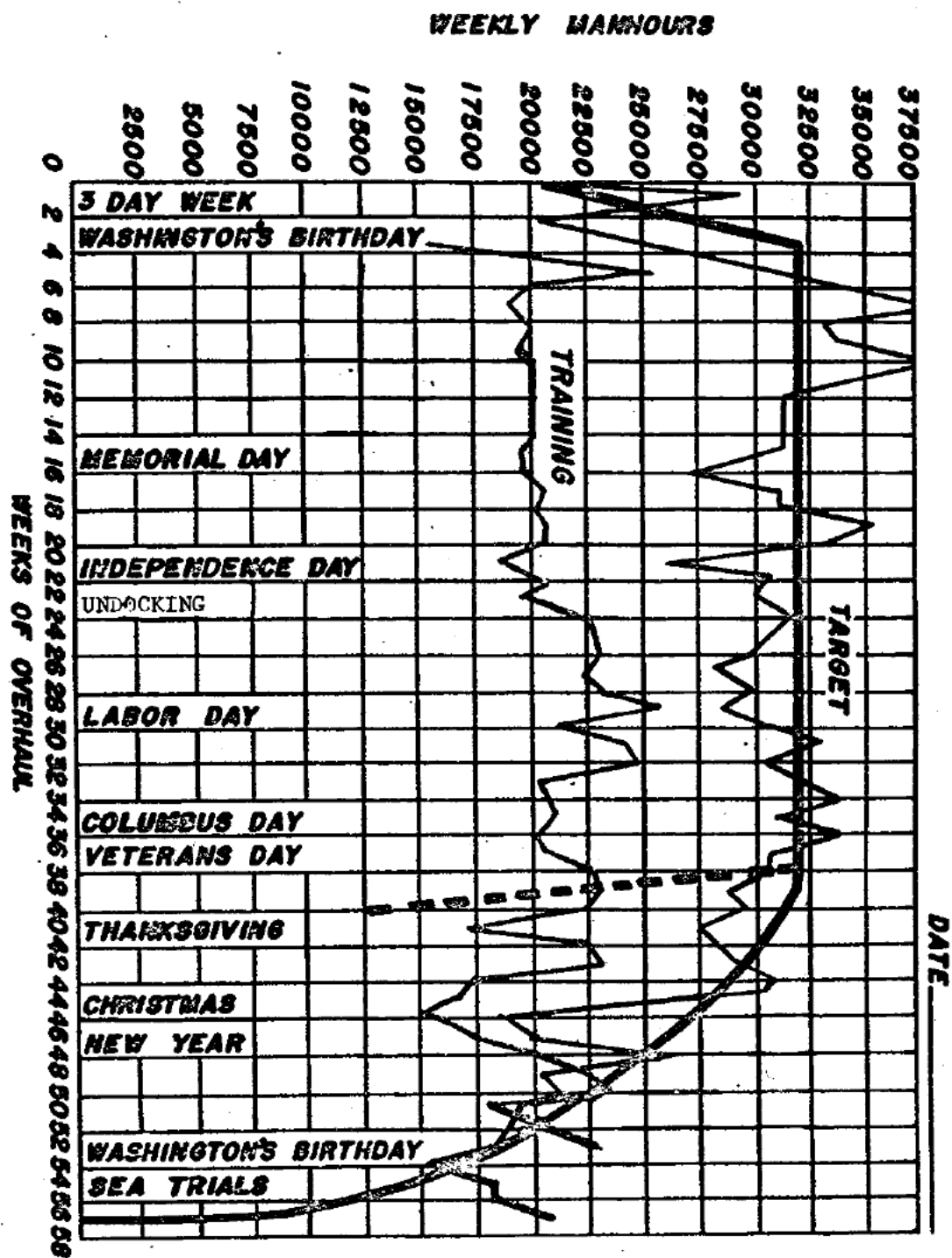


Figure (5)

COMMUNICATIONS

During the overhaul period the following SHIPALTS were scheduled for the Communications Department:

S/A	K-KY-8 Update
S/A	K-WSC-5 to WSC-3 System
S/A	K-SSB Update (URT-23's)
S/A	K-FLTSATCOM PERF (NAVMAC A+)

All SHIPALTS were completed with the exception of the SSB Update (URT-23's) which has been rescheduled for FY 80.

In addition to the above SHIPALTS, the following items were being accomplished by either ships force or shipyard personnel:

- UHF equipment overhaul (DATC)
- Whip antenna's replacement (fiberglass for aluminum)
- Installation of two Xerox 7000 copiers for message reproduction
- HF transmitter overhaul (replaces SSB update)
- Various habitability updates

LESSONS LEARNED

Key personnel should be assigned to track various overhaul items. These personnel should establish contact with key shipyard personnel and coordinate their efforts until completion.

The weekly Test Plan of the Day meeting proved to be of particular value to communications personnel to discuss shipyard work with shop supervisors, yard supervisors and technical representatives concerning proposed changes, delays and progress of SHIPALT items.

DECK DEPARTMENT

Upon entering complex overhaul on 8 February 1977 Deck Departments primary objective was the painting and preservation of Ship's spaces. The following are Deck Department major accomplishments.

1. Preserved and painted a majority of the exterior and interior spaces.
2. Bos'n Locker personnel provided spray teams assigned to Habitability and Air Department for painting of spaces.
3. Began process of replacing MK 5 liferafts with the new MK 6 liferafts.
4. Preservation and painting completed on Chain and Chain Locker.

DENTAL DEPARTMENT HISTORICAL REPORT 1977

During 1977 the Dental Department made significant changes. COH at PSNS gave the Department an opportunity to completely renovate all of the spaces.

Many of the changes carried over to 1978 for completion during the final stages of the COH.

PLANNED ALTERATIONS

1. PRC Deck - Carried over
2. Five ADEC units installed
3. Five DEN-TAL-EZ Chairs - Carried over
4. Complete Prosthetic Laboratory Renovation - Carried over
5. Filing Cabinets for Patient Records - Installed
6. S.S. White Space Maker X-Ray Unit - Carried over
7. Complete Painting and Retiling of all spaces not having PRC or Paneling - Carried over
8. Overhead installation and Upgrade Lighting - Carried over

All of the industrial work was accomplished by Departmental Personnel with limited help by Ships Company and Shipyard Personnel.

Dental provided Patient Treatment by utilizing spaces at NRDC Bremerton for a period of six months. The balancing of Industrial work, Patient treatment and Schools was a hardship for Department Personnel but was accomplished by maximum effort by All.

During the past year the Department's activity was based on Patient Care along with the Renovation of the Spaces.

EXECUTIVE DEPARTMENT

1. 3-M Coordinator.

a. Narrative of Events. Calendar year 1977 was a very productive year for the 3-M office. Changing over from an operational environment required installation of the PMDO package. CNAP personnel came aboard in January to brief all work center supts.

February, RANGER arrived in PSNS and new 3-M Coordinator reported aboard. Goals to, (a) instill a POSTIVIVE attitude towards 3-M, (b) make all personnel AWARE of the need for PMS and the 3-M program in general, (c) update LOEP's to reflect onboard equipment status, (d) acquire all PMS coverage for all equipment installed during COH, (e) rewiew SMD, (f) make the 3-M program work for ship's force rather than vice-versa were set and achieved.

March through November, a 2 day version of the "Operation and Administration of the 3-M System" (a-500-0025) curriculum was taught on a weekly basis.

The week of 14 March, was the first assist visit by CNAP surface 3-M team. This visit measured the quality of the PMDO installation.

On 29 March, a data base was created to maintain the 3-M training status of all personnel on board.

On 8 April, presented the first CONFIDENCE lecture to I Division personnel. This "heart to heart" talk reinforced a positive attitude towards 3-M as well as towards shipmates and the Navy.

On 25 April, received the two training films utilized in the A-500-0025 course for permanent custody.

On 5 May, the PQS training requirements were reviewed and updated to reflect the needs of the ship.

On 21 June, made the CONFIDENCE lecture available at the division level in order to reach all personnel who had been aboard prior to it's creation.

The week of 11 July, was dedicated to a assist visit by CNAP. Schedules were reviewed, spot checks held and miscellaneous questions by work center supervisors were answered.

On 1 September, a memo was distributed to all concerned to start considering the creating of a schedule for completing all necessary PMS in a timely, well-organized fashion prior to sea trials.

On 15 September, assembled all division officers to clarify their responsibilities in the area of 3-M in general and CSMP specifically.

September was set aside in part to validate the Planned Maintenance Projected Manhours report.

October, began the validation of the PMS package in preparation for the SMD review.

The week of 28 November, was dedicated to assist visit by CNAP. Unofficial inspection of departments, review of records and dialogue with work center supervisors were the highlights of this visit.

An attempt to acquire both a key punch machine and a card embosser was made during the month of November.

A program to visit all work center supervisors on a one-on-one basis to review their CSMP and offer assistance as necessary was launched during the month of December.

For the year, 359 supervisory personnel attended the 2 day class while over 2,000 personnel received the CONFIDENCE lecture.

b. Chronology of Significant Events for 1977:

January 5 - PMDO installation by CNAP 3-M team.

February 15 - Commenced COH at PSNS.

February 17 - New 3-M Coordinator reported aboard.

March 14 - Assist visit by CNAP 3-M team.

March 29 - Established 3-M training date base.

April 5 - Received permanent custody of 3-M training film and began extensive training program.

May 5 - revised 3-M PQS training requirements.

July 11 - Assist visit by CNAP 3-M team.

September 1 - Began IN RATE PMS scheduling and accomplishing drive.

November 28 - Assit visit by CNAP 3-M team.

2. Legal.

a. General Courts-Martial: 0

b. Special Courts-Martial: 16

c. Summary Courts-Martial: 43

d. Captain's Mast: 747

e. Personal Claims:

(1) Processed: 73

(2) Total Value: \$22,584.05

f. Legal Assistance Cases: 1565

3. Chaplains.

a. The Chaplains assigned provided professional guidance and counsel within the context of the religious ministry to Rangemen and families during calendar year 1977. The aim of the ministry was to promote the spiritual, religious moral, corporate and personal well-being of the members of the Command by providing a ministry according to their rights and needs. The Overhaul period provided opportunities for Rangemen to experience an in-dept relationship with local churches that sea-duty rarely affords. Divine Services were held aboard regularly to complete the religious programming. Intensive personal counseling during the frustrating and noisy COH period comprised the majority of the Pastoral phase of ministry.

b. CDR [REDACTED] (b) (6) reported aboard on 27 June 1977 to relieve CDR [REDACTED] (b) (6) as Senior Chaplain. LCDR [REDACTED] (b) (6) was released from Active Duty in 13 July, and his relief LCDR [REDACTED] (b) (6) reported 7 October 1977 as the Catholic Chaplain.

4. Administrative Department.

a. Ranger published a new Retention Manual (RANGERINST 1133.3) and became the first carrier to win the coveted Golden Anchor Award for retention while undergoing overhaul at Bremerton Washington.

b. LT [REDACTED] (b) (6) relieved LCDR [REDACTED] (b) (6) as Admin Officer on 30 August 1977.

AIR DEPARTMENT

1. Air Department contribution to the Command History for 1977;

- a. Reserve AIR WING Operational Readiness Inspection was held on board Ranger January 1977 receiving a grade of outstanding.
- b. Seven major SHIPALTS were completed during Overhaul. Included SHIPALTS were:
 - c. Installation of rotary launch valves in bow catapults. This was done to increase capability and increase efficiency of bow catapults.
 - d. Installation of MK 7 JBD's on bow catapults. This was done to make ship more compatible to F-14/A-6 aircraft.
 - e. Installation of cat trough strainer system in waist cats 3 and 4. Improved cat drain system.
 - f. Modified cat trough side rails on all four cats. Done to reduce corrosion problems associated with old side rail system.
 - g. Enlarged wing void drain lines on cats 1 and 2. Done to improve wing void drainage.
 - h. Modifications to cat system condensate drain system to return condensate to steam plant.
 - i. New electrical system was installed in all four catapults.
 - h. Arresting gear was overhauled and TME ILARTS was installed in the PLAT system.

2. About 75% of the crew was sent through aircraft firefighting school. About 20% of the crew completed Ranger 3-M school. Five people completed career information school; 2 people completed LMT school and the V-2 (Air Department Machinery) division.

WEAPONS DEPARTMENT HISTORY 1977

During the complete overhaul of 1977, RANGER underwent major Weapons configuration changes including the removal of the remaining two 5" 54 caliber gun mounts in March. In their place were put twin sets of the NATO Sea-Sparrow Missile Launchers and support equipment. This change was in response to an effort to improve the ship's ability to defend herself against the ever-increasing complexity of modern weepo systems.

Other major efforts in the Weapons Department were focused on the preservation of various magazines and elevator and on the installation of a 10,500 pound capacity lower stage weapons elevator.

MEDICAL DEPARTMENT HISTORICAL REPORT 1977

Significant changes for RANGER's Medical Department in 1977 started with Northwest Trek to participate in COH-77 at Puget Sound Naval Shipyard.

The removal of many hospital beds on Ward One provided the needed space for building our new Intensive Care Unit, but 1977 came to a close without seeing its completion.

A complete refurbishment of all the Battle Dressing Stations was accomplished along with most of the Main Sick Bay spaces. This included chipping and painting, ripping up old tile and putting down new, replacing unserviceable lagging and in general giving a facelifting to the tired old place.

Medical care continued but elective surgery was eliminated to facilitate the installation of new wiring in the Operating Room overhead.

Liaison, and many lasting friendships, were established at Naval Regional Medical Center, Bremerton, who saw to our additional medical needs and provided assistance in the form of Physician Assistants sent on board to help with the care of patients. Their enthusiasm was contagious and prompted the formulation and publication of a booklet guide for diagnosis and treatment for RANGER's corpsmen.

When our only Medical Officer was required to be off the ship, NRMC Bremerton provided a Medical Officer during his absence.

The Hospital's Laboratory willingly provided a Lab Technician for coverage while our Lab Tech. received continued training in their facility. When the Medical Center was in need of the professional skills of our Operating Room Technician, a highly trained Hospital Corpsman was sent to assist in our Sick Call.

The loss of many of our trained Corpsmen during the year, the increased workload due to industrial injuries and the industrial work done by the Medical Department forced the slackening of our inservice training program but not the quality of care provided to the crew.

Several calls from the Medical Center for blood donors from RANGER's crew produced responses beyond their capabilities for drawing this exceeding their requirements for fresh whole blood.

SUPPLY DEPARTMENT HISTORICAL REPORT - 1977

Calendar year 1977 was a year of high activity and renewal for the Supply Department. The beginning of CY 1977 found the Department in the midst of final preparations prior to beginning the complex overhaul (COH) 1977, at the Puget Sound Naval Shipyard. COH-77 included major yard work and Ship's Force Overhaul Management Systems (SFOMS) work for numerous departmental spaces. Further, the Supply Department was completely modernizing USS RANGER's ship consumable and repair parts inventory as part of they type commander's Supply Overhaul Assistance Program (SOAP). RANGER was the first AIRPAC Carrier to offload their aviation inventory for purification at NAS North Island by the Fleet Aviation Logistics Center (FALC). The SOAP efforts resulted in the modernization of all weapons support parts lists culminating in the aggregate full allowance backload of an inventory of about 131,000 line items tailored to support shipboard equipment and an embarked Airwing.

The COH 77 provided for extensive repairs, configuration changes and habitability improvements within the Supply Department. The shipyard redesigned the laundry facility and replaced major laundry equipment to meet current quality and production specifications. Similarly, the dry cleaning plant received new equipment to keep pace with today's synthetic fabrics and increased demand for dry cleaning services. In addition, ship's stores facilities received a face lift including the construction of an all brand-new barber shops. Sales exceeded 600,000 dollars with an average corresponding stock turn of 1.7.

Food Service facilities were renovated and provided with various new equipment, terrazo decking, deep fat fryer, doughnut maker and convection ovens. The Mess Decks were rehabilitated with new decor.

Increased attention to habitability was a main focal point for the "RANGER Hilton". Additional racks were installed and 5 staterooms were converted to bunkrooms to bring the total "RANGER Hilton" accommodations up to 469.

In July 1977, USS RANGER Supply Department completed the conversion to the Comptroller of the Navy (NAVCOMPT) sponsored Shipboard Joint Uniform Military Pay System (SJUMP). Our DKs and DPs were quick to overcome the systematic problems encountered during the successful installation of the first fully automated pay check preparation system in USS RANGER's history.

On 15 July 1977, CDR (b) (6) relieved Captain (b) (6) (b) (6) and became the twelfth Supply Officer since USS RANGER's commissioning.

During COH 77 the Food Service Division gained fame with the establishment and operation of the "Drydock Deli", a semi-fast food sandwich galley which operated seven hours a day, seven days a week, to support crew feeding needs during continuous yard work.

Throughout CY 1977, the men who man the USS RANGER Supply Department continued to live up to the demands of their profession and uphold the motto - "Excellence in Support".

SAFETY

There were varied responsibilities shared by the Safety Department during 1977 while RANGER was undergoing major Overhaul at Naval Shipyard Bremerton, WA. Some of the major accomplishments attained by the Safety Department are compiled below.

Conducted frequent periodic inspections of the ship, observed working conditions and performance of personnel and conformance to safety standards, and reported to the appropriate departments on all matters which were inconsistent with good safety practices.

Issued protective equipment to personnel who were required to perform hazardous duties.

Supervised and coordinated the ship's drive safe program.

Maintained records and prepared reports and endorsements as directed by higher authority.

Maintained liaison with other carriers in order to share and profit by new developments.

Investigated accidents/injuries reported on RANGER.

Ensured that corrective action was taken immediately on hazardous situations revealed by accident and hazard reports.

A major hazard which prevails during any ship overhaul is the frequency of fires. Hot work is being performed throughout the ship. RANGER's Safety department working in close consonance with the Shipyard Safety Supervisor was active in training fire watches and promoting a fire prevention program, through safety awareness, which resulted in the least number of reportable fires for a CV, during overhaul, in recent history.

TRAINING DEPARTMENT HISTORICAL REPORT

The year 1977 saw the development of a separate department created to handle the multitude of difficulties associated with training aboard an aircraft carrier. The Training Department consists of the Training Office, Educational Services Office, and the Indoctrination division.

While in Bremerton going through overhaul 800 people applied for tuition aid to attend Olympic College. Approximately 1500 personnel were sent to Navy schools. During this period there were about 100 people who completed their high school equivalency test and another 30 received high school diplomas through the St. Louis High School program.

Of the over 1000 personnel who participated in the Navy-wide examination, over 700 were advanced, or about 70%.

NARRATIVE OF EVENTS

The USS RANGER (CV 61) began the year 1978 moored to pier 3, Puget Sound Naval Shipyard, Bremerton, Washington completing the final 12 weeks of Complex Overhaul.

With the vast bulk of the work package completed, RANGER began conducting tests and drills pending final acceptance of the work done in the yards. The months of February and March were filled with preparations for Sea Trials, Anchor Tests, and QG Drills.

March 21 RANGER steams out of beautiful Puget Sound loaded with dependents, household goods, pets, and automobiles all looking forward to returning to RANGER's permanent homeport of San Diego, California. The five day trek South was very pleasant and fairly uneventful except for the sudden delivery of an infant girl named (b) (6) on the last day of the West coast transit.

RANGER settled into its new homeport at Naval Air Station, North Island, San Diego, California on March 25. The next two months were spent pierside ensuring that dependents were all settled in an comfortably acquainted with the San Diego area once again.

The ensuing summer months were busy ones for the RANGER and her crew. Refresher Training began in mid-May which was the start of many graded exercises and inspections that RANGER would undergo during the next several months.

Captain Douglas R. McCrimmon was relieved as Commanding Officer of RANGER by Captain Thomas G. Moore in a ceremony held in RANGER's Hangar Bay One on June 17. In Captain Moore's greeting to the men of RANGER that day he stressed the importance of the individual efforts of each man in making RANGER the powerfully superb ship it is today.

RANGER made nation-wide news on July 10 when the Navy hosted the 1978 All-Star Baseball Game Luncheon on RANGER's Hangar Bay One. The luncheon was attended by such well known sports people as Danny Kaye, owner of the Seattle Mariners and Baseball Commissioner Bowie Kuhn. A fashion show was made spectacular with the use of the RANGER's aircraft elevator overlooking downtown San Diego during the afternoon affair.

The remainder of 1978 was spent preparing RANGER for her upcoming deployment to the Western Pacific in February of 1979, undoubtedly starting the beginning of another memorable year.

CHRONOLOGY OF SIGNIFICANT EVENTS

JANUARY

1 RANGER continues pierside overhaul work at Puget Sound Naval Shipyard in Bremerton, Washington.

FEBRUARY

23-26 RANGER conducts a fast cruise in preparation for upcoming completion of COH.

MARCH

3-8 RANGER is underway for Seatrials, Anchor Tests and CQ drills.

21 Change of homeport of RANGER from Bremerton, Washington to San Diego, California. Dependents, guests and technical representatives sailed with RANGER southward bound with household goods and automobiles.

24 Infant girl is born on board RANGER to (b) (6) (b) (6) during transit to San Diego. Child is named (b) (6).

25 RANGER moors at NAS North Island, San Diego, California.

MAY

15 Underway for Refresher Training.

24 198,000 arrested landing on RANGER's flight deck since commissioning in 1957.

JUNE

7 RANGER completes Refresher Training with a high overall passing grade.

17 CAPT Thomas G. Moore relieves CAPT Douglas R. McCrimmon as Commanding Officer of RANGER.

JULY

10 RANGER hosts a luncheon on hanger bay for the 1978 baseball All-Star Game Committee.

SEPTEMBER

13 F-14 lost in water after being catapulted off RANGER's flight deck. Pilot and NFO recovered safely.

28 EA-6B lost in water during flight operations, one NFO recovered safely, Pilot and one NFO lost; Search and Rescue operation proved futile.

DECEMBER

4 Underway for FLEETEX 78.

7 A-7 aircraft rolled off of Flight Deck into catwalk.

10 199,000 arrested landing on RANGER's Flight Deck since commissioning in 1957.

AIMD HISTORICAL REPORT 1978

For AIMD it was a year of transition. Transition from completing space renovation in the ship, reworking test equipment and ground support equipment off the ship during overhaul early in the year to installing it all aboard. This was followed by the myriad of actions necessary to provide the best in Air Wing support during work up periods with the Air Wing and the upcoming WESTPAC deployment.

The following are considered items of major accomplishment and historical significance in that effort:

Completely rehabilitated the 417 man berthing area and 50 other AIMD spaces.

Steamlined the Production Control operation by moving into S-6 spaces and integrating the maintenance and supply support effort.

Developed and successfully tested an Aircraft Maintenance Quality Improvement Program which was submitted to CNO with a recommendation for Navy-wide implementation.

Developed a comprehensive management improvement program for work center supervisors through a series of briefings utilizing Aviation 3M system data.

Hydraulic Shop and Jet Test Cell were overhauled.

New engine hoists were installed and an engine component repair shop was established.

C-1A was transferred and the maintenance and enlisted flight crews were sent TAD to VF-30 on a trial basis to evaluate the effectiveness of pilot and aircrew training and maintenance managed by VR-30.

Personnel received extensive training through formal schools as well as TAD assignments to the West Coast air stations.

Completed INSURV Inspection and Operational Readiness Evaluation with an overall grade of Outstanding.

Installation and verification (comprehensive test) of approximately 200 major test sets/systems, including VAST (Versatile Avionics Systems Test), HATS (Hybrid Automatic Test Set), Mini SACE (Simi Automatic Check Out Equipment), and FLIR (Forward Looking Infra Red) were completed ahead of schedule.

EA-6B VAN Shipalt was completed, VANS installed and verification commenced.

Comprehensive Ground Support Equipment Rehabilitation Program lasting over 13 months was completed at a savings to the Navy of over two million dollars.

AIR DEPARTMENT HISTORICAL REPORT 1978

RANGER completed overhaul in March and went to sea with an almost green crew in the Air Department. Training began in the yards but practical experience was sorely needed before this large group of individuals could function as a close knit team.

Little modification was accomplished during the COH to catapults, arrestment, fueling or lens gear. A complete modernization to primary fly control was conceived and planned early in the year with actual installation accomplished in three stages during inport periods in November and December. The new panels will put all lighting, communications and catapult/elevator suspended controls within easy reach of Air Officer.

Constant steam pressure rotary valves were installed on RANGER's one and two catapults and have proven reliable except for electrical pressure interface indicator switches which require constant maintenance and replacement. One hundred and thirty-three deadloads were fired and over 8500 aircraft were launched from RANGER's four catapults. RANGER recorded it's 199,000 arrested landing in December when an E-2 Hawkeye from VAW-117 caught the number three cross deck pennant.

A new type roll-on non-skid deck surfacing was applied to RANGER's flight and hangar decks which is proving to be superior in all respects to the previous spray on type.

RANGER completed 19 aviation fuel underway replenishments during 1978 as follows:

USS TALUGA TAO-62 (11)

USS CAMDEN AOE-1 (6)

USS WICHITA AOR-3 (1)

USS ROANOKE AOR-7 (1)

A new fuel management practice was initiated in November 1978. The resultant effect was complete elimination of fuel spills during the last six UNREPS. Since leaving the yard, the V-4 Division has fueled 7,140 aircraft, delivering 7,953,940 gals of JP-5 equating to an inventory of \$3,626,997. During the year only six aircraft sorties were canceled due to fueling difficulties.

RANGER's aviation gasoline system was decommissioned in accordance with COMNAVAIRPAC directives in July 1978.

COMMUNICATIONS DEPARTMENT HISTORICAL REPORT 1978

During the year of 1978, Ranger's Communications Department came across with one of the strongest performances of any West Coast carrier. Immediately upon leaving the yards in March 1978 Ranger's Communications Department scored a 92.5% during REFTRA and a 93.5% during ORE. The Communications Department also completed their entire Communications Cycle Competitive Exercises in a 3 month period with an overall grade of over 96%.

During the 1977 COH in Bremerton, Washington, the NAVMAC's A+ system and two Xerox 7000's were installed, with completion coming in February 1978.

Traffic totals for 1978 are as follows:

January	2912
February	3017
March	2694
April	2856
May	6537
June	7785
July	9995
August	8101
September	10163
October	15412
November	14160
December	16718
Total	100342

DENTAL DEPARTMENT HISTORICAL REPORT 1978

During 1978, the Dental Department completed COH-77. The accomplishments during COH-77 are as follows:

Three Dental Department staff members were cited for their actions during COH-77. The personnel receiving special recognition were:

(b) (6)

Navy Commendation Medal

(b) (6)

COMNAVAIRPAC Letter of Commendation

(b) (6)

COMNAVAIRPAC Letter of Commendation

(b) (6)

was also cited as one of the "Outstanding Enlisted Men" in the San Diego area by the local Chamber of Commerce.

Dental Department personnel utilized their knowledge of dental materials to effect temporary repairs on numerous items of equipment for other departments.

Dental Department personnel participated in REFTRA, INSURV, FLEETEX 78, and all other shipwide evolutions during 1978.

ENGINEERING DEPARTMENT HISTORICAL REPORT 1978

The year 1978 began with the Engineering Department preparing for its fourth and fifth Light-Off Examinations (LOEs) conducted by the CINCPACFLT Propulsion Examining Board (PEB). The LOE for 2 MMR was satisfactorily completed on 10-11 January and for 3 MMR the same result was achieved on 2-3 February. With these important milestones successfully completed, the complex overhaul which began almost a year earlier was rapidly approaching its climax. The final act of the overhaul period consisted of Dock Trials: 23 February; and Sea Trials: 3-9 March during which all engineering systems and equipment were given a final operational test. The overhaul was officially completed on 21 March and the ship returned to San Diego arriving on 25 March.

The next major engineering event was participating in Refresher Training between 15 May and 8 June during which both the regular underway watch teams and the General Quarters Teams received valuable training in the areas of casualty control and damage control. The Engineering Department received an overall grade of 95 for their efforts.

Building on the solid foundation attained during REFTRA, the propulsion and electrical watch standers began an intensive period of training for the forthcoming Operational Propulsion Plant Examination (OPPE) to be conducted by the CINCPACFLT PEB. This training consisted of conducting several hours of casualty control training during each underway period. The OPPE was conducted in two phases: inport on 4 August and underway on 9-11 August with a grade of Conditionally Satisfactory achieved.

Immediately following the OPPE, the Engineering Department had all areas closely examined by the board of Inspection and Survey headed by RADM Bulkely to determine in detail its material condition and ability to sustain continued operations at sea.

During the period between 12 September and 16 December the ship was underway almost 75 percent of the time and on 3-4 November the engineers participated in an Operational Readiness Examination conducted by COMNAVAIRPAC. The watch standers were evaluated as impressive in their ability to effectively handle casualty control drills.

The year ended for the Engineering Department amidst preparations for the forthcoming extended WESTPAC Deployment.

EXECUTIVE DEPARTMENT HISTORICAL REPORT 1978

The Command Master Chief interviewed approximately 150 individuals during 1978 and served on various boards and committees including the Professional Growth and Development Board, Striker Board, Career Retention Board, Planning Board for Training, Correctional Custody Evaluation Board, and the Command "Man of the Month and Year" Boards. He presents a two-hour brief to newly assigned personnel on a weekly basis which totals approximately 600 individuals.

(b) (6) relieved (b) (6) as Personnel Officer on 12 April 1978. Personnel Office processed 554 Disc/Sep, 489 transfers and received 1,157 new members of the Ranger crew.

The year 1978 was one of great strides in regard to Human Resources on board Ranger. The CAAC screened 224 drug/alcohol clients, and conducted training for over 622 Rangemen and their wives. On board therapeutic groups were conducted, as well as AA meetings and substitute NASA educational classes. Additional self-awareness groups are provided for individuals not having a drug/alcohol problem. The Human Goals Office has been disbanded and all services have been incorporated into the CAAC. Ranger is now entirely self-sustaining and in category "A" in regard to PHASE II EQUAL-OPPORTUNITY/RACE RELATIONS PROGRAM. In addition to the outstanding services provided by the CAAC, Ranger also has a complete video outfit which has proven extremely useful in some of our ongoing groups.

1978 showed a dramatic increase in the amount and variance of legal assistance cases handled by Ranger's Legal Office. The overall increase amounted to about 40%, with some categories of assistance rising as much as 300%. This brought the total amount of legal assistance cases to over 2100 for 1978. There was only a slight increase in the amount of courts-martials processed through Ranger's Legal Office. 1978 witnessed over 30 Special and Summary Courts-Martials of Ranger personnel.

In March 1978, during the Ranger's overhaul in Bremerton, Washington, the Discipline Office was moved from where the Personnel Record Vault is (2-124-6L) to its present location next to the Legal Office (01-229-1Q). In 1978, 847 personnel were sent to Commanding Officer's NJP, an increase of 13% over 1977.

First term personnel that reenlisted was 24.9%, second term was 32.2%, and third term was 44.8% net. Also Ranger's Navy Career Information Team talked to well over 2,000 personnel on subjects pertaining to Navy life or civilian life. We processed approximately 500 request chits to CHNAVPERs and about 1000 swap requests to other ships. NAVCIT also called the detailers every day during the week ranging from 50 to 200 calls per week.

During the past year, Special Services expanded its facilities to include a universal gym room, a gear issue cage, and three 12 passenger vans. We purchased uniforms to support a Ranger team in football, softball, track, soccer, and flag football. We also received on board a professional PA system to support USO shows while at sea. 130 televisions were installed for crews use.

During the year 1978 the Print Shop purchased several new pieces of equipment which included an A. B. Dick 360 Offset Press, a Log "E" MK432 process vertical camera, and a Kenro film dryer. All of these pieces of equipment along with the others already in the shop helped produce the nearly 4 million copies printed by Ranger's Print Shop.

Over 50 tons of mail was received for distribution during stateside operations for both incoming and outgoing mail. Over 2,600 registered pieces of mail were handled. Over 20,400 money orders were used during 1978, for a value of \$1,647,500.00 and a value of \$3,800.00 in fees. 1,000 money orders were cashed for a value of \$880,000.00. Over \$40,500 worth of stamps were sold to Ranger personnel.

3-M began 1978 by setting some serious goals: Ensure all PMS on all laid-up equipment and newly installed equipment to be completed prior to Seatrials; acquire all PMS coverage for all equipment installed as a result of the shipyard overhaul; spend more time in the field assisting work center supervisors and anyone else in need; support the INSURV effort; train newly reporting personnel in their responsibilities as non-supervisory maintenance personnel; continually improve, shipwide, in the area of PMS and MDCS. Due to the tempo of operations, the instability and less qualified personnel in this office, much time and effort was required just to maintain the paper flow. All goals stated were achieved except for spending more time in the field with the work center supervisors. For the year, 150 supervisory personnel attended the 2-day version of the "Operation and Administration of the 3-M System" course while 1021 received indoctrination and PQS training as non-supervisor maintenance personnel. Over 7,000 cards were key punched in support of the ZIP/ZONE program and 8,987 documents in support of the CSMP. Feedback reports processed totalled 1,346 with 62 remaining to be answered.

The chaplains assigned to Ranger for 1978 were CDR (b) (6) and LCDR (b) (6). They held divine services on board at sea and in port, as well as coordinating other services for special groups conducted by lay leaders including Jewish, Latter Day Saints, and Church of Christ. Bible studies were held on weekday evenings. Catholic Mass was held daily. Many members of the crew and their families were counseled during numerous counseling sessions available every day. American Red Cross, Navy Relief, and Western Union messages of an emergency nature were handled by the chaplains to inform servicemen of problems and crises at home. Memorial services were conducted each time a Rangerman lost his life: FA William J. Komarek on 7 August 1978; LCDR Clarke M. Bruce and LTJG John R. Babione on 2 October 1978; OSCS Eugene P. Barnes on 16 November 1978.

The Public Affairs Office moved its television and radio studios to a new location which greatly increased the capability to provide timely information and recreation for the crew. Capabilities of the new facility include three FM stations broadcasting simultaneously, video taping of presentations and new shows, broadcasting AFRTS pre-programmed television programs, and sports events, and live remote programs with the use of a mini-camera. In March PAO did much work in coordinating all aspects of the successful transfer of homeport from Bremerton to San Diego, including publishing a large guide concerning the transfer of dependents, cars, household effects, and even pets aboard Ranger in addition to how to get settled in San Diego once the ship arrived. On 20 May, (b) (6) relieved (b) (6) as Public Affairs

Officer. In June the Public Affairs Office was moved from 02-212-2Q to 2-128-6Q in order to make room for the embarking air wing. Also in June, Public Affairs hosted the 1978 All Star Baseball Game Luncheon on Ranger which proved to be a great success for all concerned. Throughout the year the Public Affairs Office sponsored tours for many socially prominent and community-involved people to better improve the Navy's standing in the community. For the benefit of the crew, Ranger also hosted such sports celebrities as Willie Brown and Jack Tatum of the Raiders and Randy Cross of the 49'ers, plus the entire San Diego Clippers Basketball Team. (b)(6) relieved (b)(6) as Public Affairs Officer on 13 August.

FIRST LIEUTENANT HISTORICAL REPORT 1978

Ranger was involved in a complex overhaul from February 1977 through March 1978. By completion of the overhaul, Deck Department had achieved its primary objectives, the preservation and painting of a majority of the exterior and interior spaces including the painting of the anchor chain and chain locker and the installation of MK6 liferafts.

With the completion of overhaul Ranger was tasked with an extensive underway schedule. Throughout the underway periods, all UNREP opportunities were fully utilized to increase departmental training and readiness. Forty-five UNREPS during the year offered experience with a wide variety of UNREP ship types and allowed the use of a variety of UNREP methods.

The following is a break down of UNREPS in 1978:

<u>Type Ship</u>	<u>Number of UNREPS</u>
T-AO	14
AOE	8
AOR	6
AE	4
DD	6
DDG	3
AFS	2
DLG	1
FF	1

Other major events in which Deck Department favorably represented Ranger were REFTRA in June, INSURV in August, and ORE in November 1978.

MARINE DETACHMENT HISTORICAL REPORT 1978

The Marine Detachment, USS RANGER spent the beginning of this reporting period homeported in Bremerton, Washington. During this period the Marine Detachment strove to complete the overhaul work conducted on its spaces. At the end of March the RANGER completed its overhaul period and changed Homeports to Naval Air Station, North Island, California. For the rest of this reporting period RANGER spent 50 percent of the time at sea. While at sea the Marine Detachment began to conduct extensive training in all its shipboard missions. The inport periods where used to conduct pistol re-qualification and MOS oriented training.

While at sea or inport the Marine Detachment provided a full time security and correctional custody staff.

MEDICAL DEPARTMENT HISTORICAL REPORT 1978

The year started out with frenzied effort to complete COH-77 and ready RANGER's Medical Department for Sea Trails. The Intensive Care Unit was finished and all spaces declared seaworthy and ready for the many trails of an operational carrier.

To head this long list of evolutions was the memorable and history making Southward Bound trip when Senior Medical Officer, LCDR (b) (6) and Ship's Surgeon, CAPT (b) (6) joined forces to head the medical team that delivered the first baby ever born on a Naval Warship named RANGER. It was a girl born to (b) (6) on 24 March 1978.

Refresher Training commenced in May with Hospital Corpsmen dispersed throughout the ship giving first aid lectures to the crew when they could be spared from their complex duties. When the smoke cleared and the final battle problem graded, RANGER's medical condition was declared "ready for unrestricted operations." Back to the Fleet and commence numerous Underway periods for Carrier Quals.

These periods at sea saw RANGER without a permanent Ship's Surgeon so the void was filled by surgeons from the different medical facilities in the area on a rotational basis.

With the addition of squadron personnel this increased the number of Health Records that had to be filed and a new (to us) file cabinet was installed. And too, the number of shipmates requiring our services increased so sick call was set up on Ward II to separate the treatment of emergency cases from routine sick call to provide better care and to decrease manpower loss from their jobs.

INSURV Inspection, ORE/ORI and Command Inspection interspersed with missions for Carrier Quals got the crew accustomed to long hours and fitful nights with one ear tuned for the LMC calls to General Quarters, Fire, Flooding, and the two dreaded calls of "Plane-in-the-Water." Response has improved from a milling state of confusion to the finely honed "Manned and Ready" needed to complete a drill or fight the ship.

Medical Supply has been a very busy work center completing inventories and revamping the system to ensure updated medicinals and supplies for the WESTPAC Cruise.

OPERATIONS DEPARTMENT HISTORICAL REPORT 1978

In January 1978, the refurbished NTDS computer and consoles were installed, including the new NATO Sea Sparrow missile control console. An operational program functional check was conducted in February by Fleet Combat Direction System Support Activity, San Diego. Additionally final yard modification and installation of new equipments were made for the photo lab, the CVIC photo lab, the Anti-Submarine Warfare Tactical Support Center (TSC), and numerous other SHIPALTS designed to enhance the operational capability of Ranger.

Sea Trials were successfully completed in March, as well as most major SHIPALTS and new installations. These included CATOC/DAIR; the most modern afloat, a new photo lab with six automatic photo processors, two of which are being evaluated for fleet use, and the CVIC photo lab which received modifications including a new Kodak Versamat "D" photo predecessor. Also in March, the ship returned to San Diego and the "Southward Bound" trip was coordinated utilizing assets and personnel throughout the Operations Department and the ship.

The first successful firing of the NATO Sea Sparrow was completed in April, followed by Refresher Training in May, during which TSC had its first opportunity to exercise with a submarine. May also marked the completion of a highly successful Carrier Qualification period and the first phase of certification of the SPN 42.

Introduction to air operations with CVW-2 began with a CQ period in June, followed by an allied ASW exercise. During this time frame, a new closed-circuit color TV system was installed in CVIC, with a studio located in Mission Planning. A micro computer, the Analytic Photogrammic Positioning System, was also installed for use in photo interpretation.

On 15 August, a record upper air sounding of 149,000 feet was obtained by a weather balloon, launched from onboard.

The first operational Integrated Refractive Effects Prediction System (IREPS) was installed in Ranger in September which also marked completion of a very successful fleet CQ, exceeding requirements; this followed in October by three days of ASW operations with the USS GURNARD. Additionally, a new Log Electronic automatic enlarger and contact printer were installed in the CVIC photo lab.

The final phase of SPN 42 certification was completed in November, qualifying Ranger for mode 1 approach for R-4, A-5, A-6, and A-7 aircraft. Moreover, six days of extended air and ASW operations were completed during ORE/READIEX, with a grade of "Outstanding;" this was accomplished by a team who had been working together less than eight months. Also during this period, CVIC had a closed circuit monitor and TV camera installed, as well as a SSSC plot. This was followed in December by FLEETEX 1-79, during which all phases of coordinated task group operations were conducted, highlighted by eleven days of continuous ASW support for the task group.

SAFETY DEPARTMENT HISTORICAL REPORT 1978

Since completing COH-77 at Naval Shipyard, Bremerton, Washington in March 1978, RANGER's Safety Department has been tasked with many responsibilities. Some of the major accomplishments are:

Developed and instituted a more efficient program for reporting and monitoring safety discrepancies aboard RANGER which resulted in fewer long term material discrepancies.

In a continuing effort to reduce the number of traffic accidents, off duty type accidents, and shipboard accidents, a safety bulletin board was displayed on the After-brow to encourage safety awareness.

Working in conjunction with the Training Department, safety training films, both DOD and commercial, were shown on KRAN TV.

A pre-deployment shipboard safety lecture was made available to embarked and local squadrons prior to deployment.

Investigated 81 reportable accidents aboard RANGER in 1978. Two fatalities were investigated as a result of automobile accidents.

Maintained records and prepared reports and endorsements as directed by higher authority.

Maintained liaison with other carriers in order to share and profit by new developments.

SUPPLY DEPARTMENT HISTORICAL REPORT 1978

The Supply Department's mission is to provide and account for materials and funds required to maintain the ship in a state of maximum operational readiness, and to provide services that contribute to the comfort, welfare, and morale of the crew.

Calendar year 1978 proved to be a successful year for the Supply Department as many spaces were renovated and new equipment was installed or existing equipment overhauled. Ranger completed the carrier overhaul period in early 1978 and the Supply Department left Bremerton, Washington with several significant improvements. All 7 divisions received thorough renovations of workcenters and storerooms during overhaul which improved their ability to provide vital services to the crew.

The Stores Division (S-1) is the point of contact for all shipboard material needs. During the year, S-1 Division was transformed from a shipboard environment into a fully operational support mode. When operational, S-1 maintains an inventory of over 50,000 line items worth over \$7,500,000.

The Food Service Division (S-2) is tasked with providing more than three meals a day to over 5,000 hungry sailors. The division underwent several changes during the year including refurbishing the messdecks, modernization of the galley, and the installation of new ovens and sculleries. Work commenced on RANGER's "Minuteman Inn" a fast food service which is expected to open in Mid-February 1979. It will be the first Fast Foodservice Operation on a West Coast ship and will offer a menu including pizza, hamburgers, fried chicken, milk shakes, french fries, and fish and chips.

The Sales Division (S-3) provides the crew personal services including the barber shop, laundry, drycleaning plant, tailor shop, and offers quality merchandise at the lowest possible cost. The division underwent several major changes during the year including the modernization of all 3 barber shops, renovation of the ship stores and soda fountains, and the installation of new dry cleaning equipment, washers, and dryers in the laundry. Work was also completed on "The RANGER Cove" which is a walk-in luxury store where crewmembers can shop for luxury items in attractive display casings. The ship stores enjoyed over \$1,400,000 worth of sales during the year and carried a merchandise inventory of over \$650,000 with an embarked airwing aboard. The Ranger Sales Division also paved the way with the introduction of electronic game machines aboard ships. The pilot program has been met with overwhelming enthusiasm by crewmembers and has been a tremendous success.

The Disbursing Division (S-4) is responsible for paying the crew, starting allotments, and cashing personal checks. During the year, the division paid out over \$15,000,000 to Ranger crewmembers. Ranger disbursing was also the first office to utilize an automated bill counter capable of counting over 1,200 bills a minute.

The Wardroom Division (S-5) is responsible for providing essential

lodging to all officers, transient civilians, and VIP's onboard Ranger. The division has cognizance of over 220 staterooms, 2 wardroom dining areas, and 2 lounges. Several improvements were accomplished during the year including the installation of new sculleries in both galleys, recarpeting both lounges, and repaneling and retiling Wardroom 1. The division was also heavily involved in the conversion of several 2-man staterooms into 6-man bunkrooms to increase Ranger's berthing capacity.

The Aviation Stores Division (S-6) is the point of contact for all aviation material needs and provides support for all aircraft assigned to the ship. During the year, S-6 Division transformed from the shipyard environment into a fully operational and complex support mode. When operationa, S-6 maintains an inventory of over 50,000 line items worth over \$62,000,000.

The Data Processing Division (S-7) is responsible for operating the Univac U-1500 computer system in support of the ship's automated supply, maintenance, and payroll systems. During the year a newly overhauled computer system was installed to replace the previous system and the 7 keypunch machines underwent extensive overhaul to increase the equipment uptime.

TRAINING DEPARTMENT HISTORICAL REPORT 1978

Since the establishment of the Training Department in 1977, steady growth and development has been made. During 1978 Ranger successfully completed COH, REFIRA, OPPE, INSURV, and the ORE. The COMNAVAIRPAC Competitive Training Cycle ended 31 December 1978 and Ranger successfully completed all competitive exercises required for Battle "E" competition.

The Indoctrination Division also increased its size and responsibilities by incorporating 3-M and Damage Control PQS into its curriculum and expanding to a ten-day course. In all, over 1,000 personnel attended the Indoctrination Program during 1978.

The ESO Division emphasized improved services to the crew and better communication through closed circuit TV, regular training officer/petty officer meetings, etc. In addition to the GED test, Reading Efficiency Courses and DANIES Course, the SAT and ACT tests were administered for the first time in 1978. Preparations also began in earnest for establishing the PACE Program on board Ranger in early 1979 for the forthcoming deployment.

The Striker Board and the Professional Growth and Development Board were headed by the Training Officer, and met at periodic intervals. In accordance with various NAVOPS issued by CNO, the command instituted the Command Advancement Program (CAP), processed one application for the new Physician's Assistant Program, and frocked 98 enlisted personnel. Ranger also trained 20 personnel in a newly established course - Handling, Removal, and Disposal of Asbestos to shipboard personnel.

ESO STATISTICS

<u>EXAMS</u>	<u>TESTS ADMINISTERED</u>	<u>AUTHORIZED ADVANCEMENT</u>
January E-7	102	66
March E-4/5/6	542	426
September E-4/5/6	576	467
November E-8/9	37	28
E-3	532	-
Military Leadership	845	-

Ranger sent on the average 45 personnel a week to various schools. Ninety-five personnel attended class "A" schools and 43 officer and 141 enlisted LMT quotas were utilized.

WEAPONS DEPARTMENT HISTORICAL REPORT 1978

The Weapons Department received many significant Ship alterations during the Complex Overhaul in the Puget Sound Naval Shipyard. The 5"/54 caliber guns were completely removed and 2 NATO Sea Sparrow Missile Systems were installed on both aft sponsons; a third will be added next overhaul. The magazines were refurbished and compartment number 6-183-1M was converted for conventional ordnance. The larger magazines received Universal Tiedown Decks as well. A new IWS elevator was installed aft and Emergency Ordnance Handling Gear was fitted in both IWS elevators; these elevators now utilize water-glycol fluid since cellulube has been phased out. Ordnance accommodations for the SA-3 Viking including ready service, deep stowage for sonobuoys and expanded stowage for marine markers and SUS's. Magazine 5-192-OM was converted for Linkless Ammunition Loading System and Magazine 5-175-OM was completely refurbished and redesigned for hypergolic stowage.

The ship got underway for Sea Trials on 3 March. Besides the normal SIAT's performed on all Ship Alterations, it was necessary to blast test the Sea Sparrow installation. On 26 April the NSSMS was interim-qualified having scored 3 hits out of four shots on drone targets.

Upon RANGER's return to San Diego she immediately entered Refresher Training. Several ammunition replenishments were accomplished both for training and to commence bringing aboard contingency and training ordnance. During this period RANGER hosted her first F-14A Tomcats while the Tomcat was undergoing ordnance suitability testing.

Refresher Training was the first of a series of inspections designed to ensure that RANGER would be ready to deploy. The Nuclear Weapons Acceptance Inspection was held the week of 21 August 1978 and was very successfully completed. The Board of Inspection was made by NAVSEACENPAC. The Weapons Department received outstanding comments for material readiness in both instances.

The major operational inspections included WEPTRAEX on the week of 23 October 1978, the MRCI on 30 October, and the ORE on the week of 6 November 1978. The Improved Rapid Rearming System was introduced during WEPTRAEX and allowed the Air Wing to expend the complete ORE Training Allowance of ordnance during ORE; RANGER is the first ship to accomplish this in recent memory. Also the NSSMS was exercised with two firings on 20 September 1978, one of which scored a direct hit on the drone.

The year closed out with FLEETEX 1-79, an exercise which included the first shipboard launches of the AQM-37 Target "D" Drone in recent years. Four Drones were successfully prepared, loaded aboard F4J aircraft, and launched as missile targets.

The major thrust for the year was one of transition from the industrial environment of the shipyard to that of a fully operational aircraft carrier ready for deployment in early 1979. The high turnover of experienced personnel due to the 14-month yard period created an enormous vacuum which required an extensive training investment to fill. The operating schedule once the ship returned to San Diego was extremely arduous but the extensive at-sea time allowed the Weapons Department to fulfill all type commander exercises and inspection requirements with outstanding success.